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SOME MEDICAL PRACTICE AMONG THE NEW ENGLAND INDIANS AND EARLY SETTLERS.

BY CAROLUS M. COBB, M.D., LYNN, MASS.

So far as I know we have no accurate observation and record of medical practice among the New England Indians, especially such as existed prior to their contact with the early settlers. There were good reasons for this: the early settlers were too busy trying to get a living, there were no trained scientific observers among them; medical practice even in England was almost wholly empirical at that time. The Pilgrims and Puritans were particularly free from incantations and the rites of magic in their medical practice for the reason that they had broken away from all those who would be led to attach importance to such agencies, although they had an abiding belief in a personal devil and in witches. Their medicine was the folk medicine of tradition and personal experience, consisting as it did largely of roots and herbs. It is very hard to tell, many times, how much they learned from the Indians and how much the Indians learned from them. We have two early books written about New England from which some idea of Indian medicine may be gained, Wood and Josselyn. Wood was a sort of press agent for New England and the reference to medical matters is only incidental, but Josselyn was a good deal of a naturalist and something of a physician.

Before giving an account of the medical practice of the New England Indians it seems necessary to say just a word in regard to medical superstition among them. Payne remarks that "The belief that internal maladies due to no visible cause are the work of evil spirits is traceable in the earliest records of ancient medicine which we possess, and is found among uncivilized races in most parts of the world, as the accounts of travelers and investigators clearly prove. It is evident that we have here one of the most fundamental, perhaps the most universal conception of the origin of internal disease." This is a true picture of the New England Indian. He believed in evil spirits and did things to drive them away, but he had never been contaminated by Eastern magic, neither did he use the elaborate methods employed, in later times at any rate, among the Indians of the West. Wood describes their Pow Wow. He says they worship Ketan who is their good God, to him "they invocate for fair weather, for rain in time of drought, and for the recovery of their sick." After giving some of the tricks of which, he says, the Indians told him, he goes on to give an account of a Pow Wow. "An honest Gentleman related a story to me, being an eye witness of the same: A Pow Wow having a patient with the stump of some small tree run through his foot, being past the cure of his ordinary surgery, betook himself to his charmes, and being willing to show his miracles before the English stranger, he wrapt a piece of cloth about

the foot of the lame man; upon that wrapping a Beaver skin, through which he laying his mouth to the Beaver skin, by his sucking charmes he brought out the stump, which he spat into a tray of water, returning the foot as whole as its fellow in a short time. The manner of their action in their conjuration is thus: The parties that are sick or lame being brought before them, the Pow Wow sitting down, the rest of the Indians giving attentive audience to his imprecations and invocations, and after the violent expression of many a hideous bellowing and groaning, he makes a stop, and then all the auditors with one voice utter a short Canto; which done, the Pow Wow still proceeds in his invocations, sometimes roaring like a Bear, other times groaning like a dying horse, foaming at the mouth like a chased bore, smiting on his naked breast and thighs with such violence, as if he were mad. Thus will he continue sometimes half a day, spending his lungs, sweating out his fat, and tormenting his body in this diabolical worship; sometimes the Devil for requital of their worship, recovers the party, to nuzzle them up in their devilish religion. In former time he was wont to carry away their wives and children, because he would drive them to these Mattens, to fetch them again to confirm their belief of this his much desired authority over them: but since the English frequented those parts, they daily fall from his colorus, relinquishing their former fopperies, and acknowledge our God to be supreme. They acknowledge the power of the Englishman's God, as they call him, because they could never yet have power by their conjurations to damnify the English either in body or goods; and besides, they say he is a good God that sends them so many things—so much good corn, so many cattle, temperate rains, fair seasons, which they likewise are the better for since the arrival of the English; the times and seasons being much altered in seven or eight years, free from lightning and thunder, long droughts, sudden and tempestuous dashes of rain, and lamentable cold winters."—"New England Prospect." Wood wrote this in 1633. Both Wood and Josselyn consider the country healthful. Wood especially took a very optimistic view. The climate seemed to impress him favorably in comparison with that of England, as did also the abundance of food. He explains the death rate among the new arrivals and claims it was not due to the climate. "It is observed by the Indians that every tenth year there is little or no winter, which hath been twice observed of the English; the year of the new Plymouth men's arrival was no Winter in comparison; and in the tenth year after likewise when the great company settled themselves in Massachusetts Bay, was a very mild season, little frost, and less snow, but clear serene weather, few North-West winds, which was a great mercy to the English coming over so rawly and uncomfortably provided, wanting all utensils and provisions, which belonged to the well being of planters: and whereas many died at the beginning of plantations, it was not because the country was unhealthfull, but because their bodies were corrupted with sea-diet, which was naught, their Beef and Pork being tainted, their Butter and Cheese corrupted, their Fish rotten, and voyage long, by reason of cross Winds, so that winter approaching before they could get warm houses, and the searching sharpness of that purer climate, creping in at the crannies of their crazed bodies, caused death and sickness; but their harms having taught future voyagers more wisdom, in shipping good provision for sea, and finding warm houses at landing." He seems to consider New England a health resort. "In New England both men and women keep their natural complexion; and as it is for the outward complexion, so it is for the inward constitution; not very many being troubled with inflammations, or such diseases as are increased by too much heat: and whereas I say, not very many, yet dare I not exclude any; for death being certain to all, in all nations there must be something tending to death of like certainty. The soundest bodies are mortal and subject to change, therefore fall into diseases, and from diseases to death. Now the two chief messengers of mortality, be feavers and Callentures; but they be easily helped, if taken in time, and as easily prevented of any that will not prove a mere fool of his body. For the common diseases of England, they be strangers to the English now in that strange land. To my knowledge I never knew any who had the Pox, Measels, Green-sickness, Head-aches, Stone, or Consumptions, etc. Many that have come infirm out of England, retain their old grievances still, and some that were long troubled with lingering diseases, as Coughs of the lungs, Consumption, etc., have been restored by that medicineable Climate to their former strength and health."

All through the early writings about New England we find the question of drinking water taken very seriously. It was one of the doubts about making a success of the undertaking. The people came very naturally to view the subject in this light, for they had drunk beer for many centuries in England. Rogers says that during the thirteenth, fourteenth, fifteenth, and sixteenth centuries fully one third of the cost of maintaining the family was for malt. Probably the lack of sugar had something to do with this use of malt. The Pilgrims began to experiment with water drinking soon after they reached Plymouth. Bradford says: "Monday, the 25th, being Christmas day, we began to drink water abroad. But at night the master caused us to have some beer; and so on board we had divers times now and then some beer, but on shore none at all." Wood, writing thirteen years after, thinks the water good but is a little doubtful about drinking it himself, and says "he dare not prefer it before good beer." For the country

it is as well watered as any land under the Sun, every family, or every two families, having a spring of sweet waters betwixt them, which is far different from the waters of England, being not so sharp, but of a fatter substance, and of a more jetty color (sparkling), it is thought there be no better water in the world, yet dare I not prefer it before good Beer, as some have done, but any man will choose it before bad Beer, Whey, or Buttermilk. Those that drink it be as healthful, fresh, and lusty, as they that drink beer." Both Wood and Josselyn seem quite taken with the physical perfections of the Indians.

"First of their Stature, most of them being between five or six foot high, straight bodied, strongly composed, smooth skinned, merry countenanced, of complexion something more swarthy than Spaniards, black haired, high foreheaded, black eyed, out-nosed, broad shouldered, brawny armed, long and slender handed, out breasted, small waisted, lank bellied, well thighed, flat kneed, handsome grown legs, and small feet: In a word, take them when the blood brisks in their veines, when the flesh is on their backs, and marrow in their bones, when they frolick in their antique deportments and Indian postures; and they are more amiable to behold (though only in Adams Livery) than many a compounded phantastick in the newest fashion. It may puzzle belief, to conceive how such lustie bodies should have their rise and daily supportment from so slender a fostering; their houses being mean, their lodging as homely, commons scant, their drink water and Nature their best clothing, in them the old proverb may well be verified: (Natura paucis contenta) for though this be their daily portion, they still are healthful and lusty. I have been in many places yet did I never see one that was born either in redundance or defect a monster, or any that sickness had deformed, or casualitie made decrepit, saving one that had a bleared eye, and another that had a wenne on his cheek. The reason is rendered why they grow so proportionable, and continue so long in their vigor (most of them being 50 before a wrinkled brow or gray hair bewray their age, is because they are not brought down with suppressing labor, vexed with annoying cares, or drowned in the excessive abuse of overflowing plenty, which oftentimes kills them more than want, as may appear in them. For when they change their bare Indian commons for the plenty of England's fuller diet, it is so contrary to their stomachs, that death of a desperate sickness immediately accrews, which makes so few of them desirous to see England. Their swarthiness is the sun's livery, for they are born fair. Their smooth skins proceed from the often annointing of their bodies with the oil of fishes, and the fat of Eagles, with the grease of Rackoones, which they hold in summer, the best antidote to keep their skins from blistering with the scorching Sun, and it is their best armour against the Musketoes, and the surest expeller of the hairy excrement, and stops the pores of their bodies against the nipping winters cold. . . If their fancy drive them to trade, they choose rather a good coarse blanket, through which they cannot see, interposing it between the sun and them; or a piece of broad cloth, which they use for a double end, making it a coat by day, and a covering by night; they love not to be imprisoned in our English fashion: they love their own dog-fashion better (of shaking their ears, and being ready in a moment) than to spend time in dressing them, though they may as well spare it as any man I know, having little else to do. But the chief reasons they render why they will not conform to our English apparel, are, because their women cannot wash them when they be soiled, and their means will not reach to buy new when they have done with their old; and they confidently believe, the English will not be so liberal as to furnish them upon gifture: therefore they had rather go naked than be lousie, and bring their bodies out of their old tune, making them more tender by a new acquired habit, which poverty would constrain them to leave." (Wood's "New England Prospect.")

Josselyn was particularly struck with the Indian women.

THE INDIAN.

"The Men are somewhat Horse Faced, and generally Faucious, that is, without beards, but the women many of them have very good features, seldome without a Come to me, or Cos Amoris, in their Countenance, all of them black eyed, having even short teeth, and very white, their hair black, thick and long, broad breasted, handsome straight bodies, and slender, considering their constant loose habit. Their limbs cleanly, straight, and of a convenient stature, generally, as plump as Partridges and saving here and there one, of a modest deportment.

"Their Garments are a pair of sleeves of deer, or Moose skin drest, and drawn with lines of several colours into Asiatick Works, with Boskins of the same, and short Mantle of Trading Cloth, either Blew or Red, fastened with a knot under the chin, and girt about the middle with a Zone wrought with white and blew Beads into pretty Works; of these Beads they have Bracelets for their Neck and Arms, and Links to hang in their Ears, and a fair Table curiously made up with Beads likewise, to wear before their breast, their Hair they comb backward, and tie it up short with a Border, about two handfulls broad, wrought in Works as the other with their Beads." ("New England Rarities.")

Wood goes fully into their diet, and from his description one gathers the impression that it was turkey one day and feathers the next. "Some of their scullerie having dressed these homely cates, presents it to his guests, dishing it up in a rude manner, placing it on the verdent

carpet of the earth which Nature spreads them, without either trenchers, napkins, or knives, upon which their hunger-fawced stomacks impatient of delayes, falls aboard without scrupling at unwashed hands, without bread, salt, or beer, lolling in the Turkish fashion, not ceasing till their full bellies leave nothing but empty platters: they seldom or never make bread of their Indian corn, but seeth it whole like beans, eating three or four cornes with a mouthful of fish or flesh, sometimes eating meat first, and corns after, filling in chinkes with their broth. In summer, when their corn is spent, Isquoutersquashes is their best bread, a fruit like a young Pumpion. To say and to speak paradoxically, they be great eaters, and yet little meat men; when they visit our English, being invited to eat, they are very moderate, whether it be to show their manners, or for shamefastness, I know not; but at home they will eat till their bellies stand forth, ready to split with fullness; it being their fashion to eat all at some times, and nothing at all in two or three days, wise Providence being a stranger to their wilder ways: they be right infidels, neither caring for the morrow, or providing for their own families; but as all are fellows at foot-ball, so they all meet friends at the kettle, saving their wives, that dance a Spaniel-like attendance at their backs for their bony fragments. If their imperious occasions cause them to travel, the best of their victuals for their journey is Nocake (as they call it), which is nothing but Indian corn parched in the hot ashes; the ashes being sifted from it, it is afterward beaten to powder, and put into a long leathern bag, trussed at their back like a knapsack; out of which they take thrice three spoonefulls a day, dividing it into three meals. If it be in Winter, and Snow be on the ground, they can eat when they please, stopping Snow after their dusty victuals, which otherwise would feed them little better than a Tiburne halter. In Summer they must stay till they meet with a Spring or Brook, where they may have water to prevent the imminent danger of choaking. With this strange viaticum they will travel four or five days together, with loads fitter for Elephants than men."

Wood mentions the pestilence which carried off many Indians just previous to the landing of the Pilgrims. He still acts the press agent and claims that the Indians were a particularly healthy race. To quote again from the New England Prospect, "Although the Indians be of lusty and healthful bodies, not experimentally knowing the Catalogue of those health-wasting diseases which are incident to other countries, as Fevers, Pleurisies, Callentures, Agues, Obstructions, Consumption, Subfumigations, Convulsions, Apoplexies, Dropsies, Gouts, Stones, Toothaches, Pox, Measels, or the like, but spinne out the thread of their days to a fair length, numbering three-score, four-score, some a hundred years, before the worlds universal summoner cite them to the craving Grave."

All the English who came in contact with sick Indians were impressed with their ceremonies to drive away the devil. Winslow went to Gardner's Neck in Swanzy to visit Massassowat and found him very sick; he says, "When we came thither, we found the house so full of men, as we could scarce get in, though they used their best diligence to make way for us. There were they in the midst of their charms for him, making such a hellish noise, as it distempered us that were all well, and therefore unlike to ease him that was sick. About him were six or eight women, who chafed his arms, legs, and thighs, to keep heat in him." Winslow gave him some conserve which he had brought, and cleaned his mouth and tongue, and Massassowat began to improve. They did not appear to know anything of sick nursing or sick diet. Roger Williams says of them, "When they are sick, their misery appears, that they have not but what sometimes they get from the English, a raisin or currant, or any physic, fruit, or spice, or any comfort more than their corn and water. In which bleeding case, wanting all means of recovery or present refreshing, I have been constrained, to and beyond my power, to refresh them, and to save many of them from death, who I am confident perish many millions of them, in that mighty continent, for want of means."

My impression is that for slight ailments, and for wounds and bruises they used medicine so far as their limited knowledge and limited resources went, but if a patient became very sick they lost confidence in medicine and resorted to the superstitious practices which are common to all people of their grade of intelligence, i. e., they tried to drive away the devil by making noise enough so that he would prefer a quieter place. This may have had a hypnotic effect upon the patient even if it did not upon the devil.

From these quotations we get the impression that the use of remedies by the Indians was extremely limited; in fact, Wood mentions but one herb which was so used, snake weed for snake bite; and Mourt's relation mentions the use of medicines but does not go into details. As a matter of fact they did use quite a number of remedies and with quite as much sense as the settlers used theirs. We are indebted to John Josselyn for a description of many of their methods of treating diseases and wounds.

John Josselyn made two voyages to New England, the first in 1638, arriving in Boston harbor July 3d, and remaining with his brother at Black Point in the town of Scarborough, Me., till October 10 of the following year. His second voyage was made in 1663. He arrived at Nantasket the 27th of July, and soon proceeded to his brother's plantation, where he tells us he staid eight years, and got together the matter for his book.

The book was not intended for a treatise on medicine but rather as a work on natural history. For this reason there is no arrangement of diseases and remedies, but he puts down anything he has learned of medical practice when he describes the bird, beast, or plant which is attracting his attention at the time. Occasionally he gives a remarkable cure of which he has heard, but generally he confines himself to what he has seen. He says he has seen pond frogs a foot high, and that the Indians told him that back in the country there were frogs as large as a child a year old. Either the story, or the frog, seems pretty large, but Josselyn makes no comment. One curious fact is that he does not mention the Pow Wow or any medicine man among the Indians in "New England Rarities," but does mention them in his Voyages, but he describes what the common people did for their ailments.

I have gone through his books, "New England Rarities" and Voyages very carefully and have tried to arrange the diseases which he mentions and remedies which he says were used. So far as possible I have let him tell his own story.

Josselyn does not take so rosy a view of the New England climate as does Wood; he says, "The Sea Coasts are accounted wholsomest, the East and South Winds coming from the sea produceth warm weather, the Northwest coming over land causeth extremity of Cold, and many times strikes the Inhabitants, both English and Indian, with that sad Disease called there the Plague of the back, but with us Empiema." He evidently found more disease in New England than did Wood and the list as he gives it is what one would expect to find.

"THE MOST COMMON DISEASES IN NEW ENGLAND."

"The Black Pox, the Spotted Fever, the Griping of the Guts, the Dropsie, and Sciatica are the killing Diseases of New England." ("New England Rarities.")

"In New England the Indians are afflicted with pestilent Fevers, Plague Black-pox, Consumption of the Lungs, Falling-sickness, Kings-evil, and Disease called by the Spaniard the Plague in the back, with us Empyema, their physicians are the Powaws, or Indian Priests who cure sometimes by charms and medicine, but in a general infection they seldom come amongst them, therefore they use their own remedies, which is sweating, etc. Their manner is when they have plague or small pox amongst them to cover their Wigwams with Bark so close that no Air can enter in, lining them (as I said before) within, and making a great fire they remain there in a stewing heat till they are in a top sweat, and then run out into the Sea or River, and presently after they are come into their Hutts again they either recover or give up the Ghost." (Josselyn's Voyages.) Josselyn's "Spotted Fever" and Wood's "Callentures" were undoubtedly typhus fever.

People living under primitive conditions are very liable to accidents and we find a full list of remedies to be used in such emergencies.

"WOUNDS."

Cod Fish.—"About their Fins you may find a kind of Lowse, which healeth a green cut in a short time."

White Hellebore.—"The Indians cure their wounds with it, annointing the wound first with Raccoon grease, or Wild Cat grease, and then strewing upon it the powder of the Roots."

Alder.—"An Indian Bruising and cutting of his knee with a fall, used no other remedy, than Alder Bark, chewed fasting and laid to it, which did soon heal it. For wounds and cuts make a strong decoction of Bark of Alder, pour it into the wound, and drink thereof."

Birch.—"White and black, the bark of the birch is used by the Indians, for bruised wounds and cuts, boiled very tender and stampt between two stones to a plaster, and the decoction thereof, poured into the wound."

Board Pine.—"It yields a very soverign Turpentine for curing of desperate wounds. The Indians make use of the moss boiled in Spring Water, for Stabbs, pouring in the liquor, and applying the boiled moss well stamped or beaten between two stones."

"An Indian, whose knee was bruised with a fall, and the skin and flesh striped down to the middle of the Calf of his Leg cured himself with Water Lilly Roots boiled and stamped."

"Winter Green, the leaves are excellent Wound Herbs."

"Clounes all heal, of New England, is another wound Herb not Inferior to ours, but rather beyond it."

The Larch Tree.—"The leaves and gum are both very good to heal wounds and cuts. I once cured a desperate bruise with a cut upon the knee-pan with an Unguent made with the Leaves of the Larch Tree, and Hogs Grease, but the gum is best."

Proud Flesh.—"To eat out proud flesh, they take a kind of earth Nut boiled and stamped and last of all, they apply to the sore the roots of water lilies boiled and stamped between two stones to a plaster."

INJURIES, BRUISES, SPRAINS.

"The Rattle Snake, they have leafs of Fat in their bellies, which is excellent to annoint frozen limbs, and for Aches and Bruises wondrous soveraign."

"An Indian whose thumb was swelled, and very much inflamed, and full of pain increasing and creeping along to the wrist, with little black spots under the thumb, against the nail, I cured it with this Umbellicus Veneris Root and all, the yolk of an egg, and wheat flour."

"The root of the Humming Bird Tree, the Indians make use of it for aches, being bruised

between two stones, and laid to cold, but made (after the English manner) into an unguent with Hogs Greese, there is not a more soveraign remedy for bruises for what kind soever, and for Aches upon the Stroaks."

"The Raccoon, their Fat is excellent for bruises and Aches."

"Blew Flower-de-luce.—For Bruises of the Feet and Face."

"Sperma Ceti Oil.—Is admirable for Bruises and Aches."

"Sassafras.—The leaves of the same Tree are very good made into an ointment for bruises and dry blows."

BURNS AND SCALDS.

"Seal Oil.—It is very good for Scalds and Burns."

Pond Frogs.—"They are of a glistening brass colour and very fat, which is excellent for Burns and Scaldings, to take out the Fire, and heal them, leaving no scar."

Decoction of Alder Bark.—"Is also excellent to take fire out of a Burn or Scald."

"Birch Bark.—Boiled very tender and stamped between two stones to a plaister, and a decoction thereof—to take the fire out of burns and scalds."

"Tobacco.—There is not much of it planted in New England, the Indians make use of a small kind with short round leaves called Pooke. With a strong decoction of tobacco, they cure Burns and Scalds, boiling it in water, from a Quart to a Pint, then wash the sore therewith, and strew on the powder of dried tobacco."

"The New England Daisy, or Primrose, is very good for Burns and Scalds."

"And for Burning and Scalding, they first take out the fire with a strong decoction of Alder Bark, then they lay upon it a plaster of the Board Pine (bark) first boiled tender, then beaten to a plaster between two stones. One Christopher Luxe, a fisherman, having burnt his knee pan, was healed again by an Indian Webb, or wife, for so they call those women who have husbands. She first made a strong decoction of Alder Bark with which she took out the fire, by Imbrocation, or letting of it drop upon the sore, which would smoke notably with it, then she plastered it with the Bark of Board Pine, or Hemlock Tree, boiled soft and stamped between two stones, till it was as thin as brown paper, and of the same colour. She annointed the plaster with Soyles Oil, (Seal oil) and the Sore likewise, then she laid it on warm, and sometimes she made use of the bark of the Larch Tree."

"Water Plantane.—Called here Water suckleaves. It is much used for Burns and Scalds.

INFLAMMATION.

"Fat of the pond frog.—Very good to take away any inflammation."

"Wood-bine.—Good for hot swelling of the legs, fomenting with the decoction, and applying the Feces in the form of a Cataplasme."

"An Indian Webb, her Foot being very much swelled and inflamed, asswaged the swelling, and took away the inflammation with our Garden or English Patience, the Roots roasted."

ABSCESS.

"Indian Wheat (wild rice).—It is hotter than our wheat and clammy, excellent in Cataplasms to ripen any swelling or impostume."

"The Indians break and heal their Swellings and Sores with it, boiling the inner Bark of young Hemlock very well, then knocking it between two stones to a plaster and annointing, or soaking it in Soyls Oil, they apply it to the Sore, it will break a Sore Swelling Speedily."

Josselyn mentions two cases of cancer which were cured: the first is an example in an English woman of the arsenic treatment; it also contains a curious little touch showing where prohibition Maine got its beer even in those days.

"I shall conclude this Section with a strange Cure effected upon a Drummer's Wife, much afflicted with a Wold in her Breast; the poor Woman lived with her Husband at a Town called by the Indians, Casco, but by the English, Famouth; where for some time she swaged the Pain of her Sore by bathing it with strong Malt Beer, which it would suck in greedily, as if some living Creature: (for it was brought from Boston, along the Coasts by Merchants.) she made use of Rhum, a strong Water drawn from Sugar Canes, with which it was lull'd asleep, at last, (to be rid of it altogether) she put a quantity of Arsnick to the Rhum, and bathing of it as formerly, she utterly destroyed it, and Cured herself; but her kind Husband, who sucked out the Poison as the Sore was healing, lost all his Teeth, but without further danger or inconvenience."

In the description of the next case it is very hard to tell just what disease he meant. Bailey's definition of scirrhus is "A hard immovable Swelling that resists the Touch, and is without Pain."

"An Indian dissolved a Scirrhous Tumour in the arm and hip, with a fomentation of Tobacco, applying afterwards the Herb stamped between two stones."

BRONCHITIS—SHORTNESS OF WIND—COLDS.

"Oak of Cappadocia, both much of a nature, but Oak of Hierusalem is stronger in operation, excellent for stuffing of the lungs upon colds, shortness of Wind, and Ptisick, maladies that the natives are often troubled with: I helped several of the Indians with a drink made of two Gallons of Molasses wort, (for in that part of the country where I abode we made our beer of Molasses, Water, Bran, chips of Sassafras Root, and a little Wormwood well boiled), into which I put of Oak of Hierusalem, Catmint, Sowthistle, of

each one handful, of Enula Campana Root one Ounce, Liquorice scraped bruised and cut in pieces, one Ounce, Sassafras Root cut in thin chips, one Ounce, Anny-seed and sweet Fennel seed, of each one Spoonful bruised; boil these in a close Pot, upon a soft Fire to the Consumption of one Gallon, then take it off, and strein it gently, you may if you will boil the streined liquor with Sugar to a Syrup, then when it is Cold, put it in Glass Bottles, and take thereof three or four spoonfuls at a time, letting it run down your throat as leasurely as possible you can; do thus in the Morning, in the Afternoon, and at Night going to Bed."

Sumach, "The English used to Boil it and drink it for a cold, and so do the Indians, from whom the English had the Medicine."

PLAGUE OF THE BACK.

"The Firr Tree, or Pitch Tree, the tar is made of all sorts of pitch wood is an excellent thing to take away those desperate Stitches of the Sides, which perpetually afflicteth those poor people that are stricken with the Plague of the Back." Note.—"You must make a toast, or Cake, slit and dipt in the Tar, and bind it warm to the side."

CONSUMPTION.

"The Land Turtle, they are good for Physick and Consumptions, and some say the Morbus Callicus." (Syphilis.)

They seem to have had fewer remedies for fevers than their frequency and importance would seem to warrant. The use of a decoction of black birch bark for chills was, of course, an accidental discovery of the effect of salicylic acid. They undoubtedly used it much as we do aspirin.

FEVERS.

"Water-Mellon, it is often given to those sick of Fevers, and other hot diseases with good success."

"Bill Berries, two kinds, Black and sky coloured, which is more frequent. They are very good to allay the burning heat of fevers, and hot Agues, either in syrup or conserve."

Agues.—Black birch for chills. The Indians are said to have used a decoction of black birch bark for chills. (Tradition.)

"Ravens-Claw is admirable for Agues."

"Sassafras, or Ague Tree, the Root boiled in Beer is excellent to allay the hot rage of Fevers, being drunk."

By aches Josselyn evidently means acute and chronic rheumatism. Here are his remedies.

ACHES.

"The Wobble, For aches, our way, for they are soveraign for aches, is to make mummies of them, that is, to salt them well, and dry them in an earthern pot well glazed in an oven; or else, which is the better way, to burn them under ground for a day or two, then quarter them and stew them in a stew-pan with a very little water."

"The Bear, their grease is very good for Aches and Cold Swellings, the Indians annoint themselves therewith from top to toe, which hardens them against the cold weather." "One Edward Andrews being Foxt, that is drunk, and falling backward across a Thought (Thwart) in a Shallop, or Fisher-boat and taking cold upon it, grew crooked, lame, and full of pain, was cured, lying one winter upon Bears Skins newly flead off, with some upon him, so that he sweat every night.

"A black Wolf's skin is worth a Beaver Skin among the Indians, being highly esteemed for helping old aches in old People, worn as a Coat."

"The Ounce, a wild cat, their grease is soveraign for all manner of Aches and shrunk Sinews."

White Hellebore.—"For Aches they scarify the grieved part, and annoint it with one of the foresaid Oils, (Raccoon or Wild Cat grease) then strew upon it the powder."

Dropsy was one of the deadly diseases which he mentions, but the remedies are very few, as they are today.

DROPSY.

Water Plantane.—"To draw water out of swelled Legs."

"Stone.—Likewise there is a stone found in their bellies (Cod fish) in a bladder against their navel, which being pulverized and drank in White-wine Posset or Ale, is a present Remedy for stone."

"Manaty.—There is a stone taken out of the head that is rare for the Stone and Collect. Their bones beat to a Powder and drank with convenient liquors, is a gallant Urin Provoking Medicine."

Scurvy was one of the most common diseases with the early settlers; it was one of the causes of the great sickness among the Pilgrims during the first winter. They knew that lemons and limes were good for the disease but they did not grow here and so they sought for other remedies, and the following are what they found.

SCURVY.

"Sea-tears, they grow upon the sea banks in abundance, they are good for Scurvy and Dropsie."

"The tops of Green Spruce Boughs boiled in Beer, and drunk, is assuredly one of the best Remedies for the Scurvy, restoring the Infected party in a short time."

"Cran Berry,—they are excellent against the scurvy."

Wood says that the danger of snake bite was not very great, and that he never heard of but

one man who lost his life in this way, still it was an ever-present fear to the settlers. The remedies were few but heroic.

SNAKE BITE.

"When any man is bitten by any of these creatures, the poison spreads so suddenly through the veines and so runs to the heart, that in one hour it causeth death, unless he hath the Antodote to expell the poison, which is a root called snakeweed, which much be champed, the spittle swallowed, and the root applyed to the sore; this is present cure against that which would be present death without it: this weed is ranck poison, if it be taken by any man that is not bitted: whosoever is bitte by these snakes his flesh becomes as spotted as a Leaper until he be perfectly cured. It is reported that if the party live that is bitten, the snake will die, and if the party die, the snake will live." (Wood's "New England Prospect.")

"The Rattle Snake.—Their hearts swallowed fresh, is a good Antidote against their Venome, and their liver, the Gall taken out, bruised and applied to their Bitings is a present Remedy." ("New England Rarities.")

"Wind in the Stomach.—The skin of the Gripe drest with the doun on, is good to wear upon the stomach for the pain and coldness of it."

"The Beaver, their solid Cods are much used in Physick: Our English women in this Country use the powder grated, as much as will lie upon a shilling in a draught of Fiol Wine, for wind in the Stomach and Belly, and venture many times in such cases to give it to Women with Child."

Teething necklace.—"The Indian Webbes make use of the broad teeth of the Fauns (Moose) to hang about their children's necks when they are breeding their Teeth. The tongue of a grown Moose, dried in the smoke after the Indian manner, is a dish for a Sagamore."

Menorrhagia.—"The Codfish, in the head of this fish is found a Stone, or rather a bone which being Pulverized and drank in any convenient liquor, will stop Women's overflowing Courses notably."

Codfish.—"Their livers and Sounds eaten is a good Medicine for to restore them that have melted their Grease."

Emetics.—"Blew Flower-de-luce; it is excellent to provoke Vomiting."

Love philtre.—"Dogstones, a kind of Satyrion, whereof there are several kinds groweth in our salt Marshes. I once took notice of a wanton Woman compounding the Solid Roots of this Plant with wine, for an Amorous Cup, which wrought the desired effect."

Film of the eyes.—"The Sheath Fish, which shell Calcined and Pulverized, is excellent to take off a Pin and Web, or any kind of Filme growing over the Eye."

Piles.—"Morse, or Sea Horse, having a great head, a wide jaw, armed with Tushes as white as Ivory, a body as big as a cow, proportioned like a Hog, of brownish bay, smooth skinned and impenetrable, they are frequent at the Isle of Sables, their teeth are worth eight Groats the Pound, the best Ivory being sold but for half the money. It is very good against Poison. As also for Cramp, made into rings. And a secret for the Piles, if a wise man have the ordering of it."

SCURVY SORES.

"Coals of Birch pulverized and wrought with the white of an egg to a salve, is a gallant remedy for dry scurfy sores upon the shins, and for bruised wounds and cuts."

SCIATICA.

"Spunck, an excrescence growing out of Black Birch, the Indians use it for Touchwood, and therewith they help the Sciatica, or Gout or the Hips, upon the Thigh, and upon certain Veins."

HERPES MILIARIS.

White Hellebore.—"The Root sliced thin and boiled in Vinegar, is very good against Herpes Miliaris."

SORE MOUTH AND FALLING OF THE PALATE.

"The decoction of blew corn is good to wash sore mouths with.

"Hasel, for sore mouths, falling of the Pallat."

Filberd.—"Both with hairy husks upon the nuts, and setting hollow from the nut, and filled with a kind of water, of an astringent taste, it is very good for sore mouths, and falling of the Pallat, as is the whole green nut, before it comes to Kernel, burnt and pulverized."

SCALLED HEAD.

"Of the Moss that grows at the roots of the White Oak the Indians make a strong decoction, with which they help their Papouses or young Children's scalled Heads."

TO KEEP THE FEET WARM.

"Bastard Calamus Aromaticus, the English make use of the leaves, to keep their feet warm."

MOTHER FITS.

Seal oil.—"Some of it, being cast upon Coals, will bring Women out of the Mother Fits." (Hysteria, Eclampsia?)

TOOTHACHE.

"The Osprey, their beaks excell for the toothache, picking the Gums therewith until they bleed."

"The dogfish, upon whose Back grows a

Thorn two or three Inches long, that helps the Toothache, scarifying the Gums therewith."

"Hellibore.—The powder of the Root put into a hollow tooth, is good for the Tooth-ache."

EARACHE.

Oil of the red fox.—"Their fat liquified and put into ears easeth pain."—Josselyn's Voyages.

FALLING SICKNESS.

"The Indians tell of a tree that growes far up in the land, that is as big as an Oake, that will cure the falling-sickness infallibly, what part thereof they use, Bark, Wood, or fruit, I could never learn; thay promised often to bring of it to me, but did not."—Josselyn's Voyages.

INDIAN TURKISH BATH.

"This Hot-house is a kind of little Cell or Cave, six or eight foot over, round, made on the side of a hill (commonly by some Rivulet or Brooke) into this frequently the Men enter after they have exceedingly heated it with store of wood, laid upon an heape of stones in the middle. When they have taken out the fire, the stones keepe still a great heat: Ten, twelve, twenty more or less, enter at once starke naked, leaving their Coats, small breeches, (or aprons) at the doore, with one to keepe all: here doe they sit round these hot stones an houre or more, taking tobacco, discoursing and sweating together; which sweating they use for two ends: First, to cleanse their skin: Secondly, to purge their bodies which doubtless is a great meanes of preserving them, and recovering them from diseases, especially from the French disease, which by sweating and some potions, they perfectly and speedily cure: when they come forth (which is matter of admiration) I have seen them runne (Summer and Winter) into the brookes to coole them, without the least hurt."—Roger Williams' Key to the Indian language.

This seems to be a description of a primitive but effectual Turkish bath. This was used, evidently, as a general hygienic measure and not for the treatment of the serious diseases such as Josselyn describes.

DISEASES COMMON TO THE ENGLISH.

"The Diseases that the Engish are afflicted with, are the same that they have in England, with some proper to New England, griping of the belly (accompanied with Feaver and Ague) which turns to the bloody-flux, a common disease in the Countrey, which together with the small pox hath carried away abundance of their children."

"Also they are troubled with a disease in the mouth or throat which hath proved mortal to some in a very short time,* Quinsies, and Impostumations of the Almonds, with great distempers of cold."—Josselyn's Voyages.

* Was this diphtheria?

The Indians were great users of oil, both as an article of diet, and to anoint their bodies. They used any kind of oil they could get, rattlesnake oil, eagle oil, seal oil, raccoon and bear's grease, and they had an elaborate method of obtaining oil from white oak acorns.

The remedies used by the New England Indians were entirely different from those used by the Western and Southern Indians, i. e., each used the plants which were native to their locality. The medicine used by the Indians and early English are of no use today, but the study of this primitive folk medicine is of interest, not alone from an historical point of view, but as showing the origin of many methods in use among the people as well.

BIOLOGIC ANALYSIS IN THE STUDY OF TRUE EPILEPSY.

By F. L. Dunham, M.D., Baltimore.

The derivation of the word "epilepsy," from the Greek verb "to seize upon," describes no less clearly the onset of the condition itself than it characterizes the whimsicalities frequently adopted by writers in discussing its etiology. It would be difficult to choose a symptom-complex about which have been woven more fantastic hypotheses than that of epilepsy, the "Sacred Disease" of the Asclepiadae, which Hippocrates characterized as no more sacred or mysterious than other ills whose nature appears to be above the level of human understanding. The tendency to justify an attitude of doubt respecting the cause of epilepsy has probably found encouragement in the superior endowment of many subjects of this disorder, who are reckoned among the world's geniuses. The more adequate adaptation to their social environment, secured in recent years to segregated groups of epileptics, has produced definite results in studying the causes and results of the disorder. At the same time the broader application of scientific method in experimentation has tended to dispel the unethical haze long surrounding the subject. Even the more recent psychoanalytical point of view, with its appeal to an obscure symbolism, has helped to develop a more thorough biologic analysis.

Whether true epilepsy is to be regarded as a simple neurosis, as a manifestation of organic disease with evidence of cerebral toxemia, or as an "unconscious striving, with its insistent urge in the fits, to return to the maternal intrauterine life," analyses following biologic lines only are justified as a means toward the recognition of potential subjects. From this point of view, a logical procedure of investigation will follow out the hereditary factors revealed in family tendencies to instability, the course of embryonic development, the early reaction to primitive instincts, together with a complete

review of the social behavior of the subject. Until the facts of such an analysis are secured no amount of pathological detail can render practical service in the disposition of individual cases.

Although most modern students of the subject agree with Hippocrates in ascribing true epilepsy to tendencies following the laws of heredity and recognize its stimuli as intimately connected with the brain, various cases, with no known intrinsic factors, indicate that some epileptics owe their condition to extrinsic or environmental causes. Current procedure, moreover, corresponds with that of Hippocratic times in attributing the most satisfactory therapeutic results to food and hygienic regulation, "without minding purifications, spells, and all other illiberal practices of a like kind."

Believing that satisfactory studies of the subject, especially such as deal with its relation to social adaptation, can result only from prolonged observation of segregated groups of epileptics, the writer presents the following data obtained from two groups of ten subjects each, inmates during several years of a modern colony-home in central New England. The children were unselected, save with reference to the frequency of definitely typical seizures. An attempt was also made to secure only those subjects who had shown no marked indication of mental inferiority in infancy. The data for analysis were secured from the following examinations:

1. An anthropological examination.
2. An intelligence test (point-scale) checked by a second (Binet-Simon) test.
3. A complete physical examination, including an examination of the urine.
4. A Wassermann reaction.
5. An examination of the social history of the family, so far as possible through personal solicitation, otherwise by questionnaire.

The subjects were also studied in their customary environment, now playing or working in groups, at other times alone with an attendant. An attempt was made to place each child at his ease by engaging him in some task, thus minimizing the changed emotional reaction incident to any examination, with its resulting inaccuracies.

That true epilepsy is often the result of defective development, whose beginnings are laid down in the egg, was suggested by the Father of Medicine in an Aphorism to the effect that "epilepsy begins to be formed while the fetus is *in utero*." This conception of its ultimate causation is amply justified by the usual pathological findings, *i.e.*, a typical arrangement of the convolutions and microgyria, generally without microscopic defect in structure except of a secondary nature. Moreover, it tends to harmonize various obscure psychic manifestations, now frequently attributed to the vagaries of lower levels of consciousness, by recognizing in them the primitive, unconditional reflexes which, through morphologic defect in mechanism, have failed to reach biologic adjustment as exemplified in the conditional reflex. In general, it is true that defective forms of morphological development are due to alterations of the normal environmental stimuli rather than to defective hereditary constitution. Even though a tendency to the latter may be inherited, a normal environment may prevent their appearance. The differentiations of cleavage, which are the earliest expressions leading to the formation of cells qualitatively and quantitatively different, are from the first subjected to an extrinsic environment whose delicacy is inconceivable save through an appeal to the elaborate physicochemical reactions of the blood. The problem of development here presented seeks to determine, so far as possible, the origin and sequence of morphological differentiations, together with the extrinsic factors whose results are manifest in epilepsy. It is well recognized that the earlier stages in development are more easily influenced by environmental changes than are later ones. That these may result in profound departures from the normal adult structures, is clear when it is recalled that at this germinal period entire organic systems may be represented by a few cells merely. Almost all persistent alterations of embryonic structure occur during cleavage, and are due primarily to interference with the divisional apparatus of the cell. This seems to be explained by the fact that when chromosomes, centrosomes or differentiated portions of the cell-body are once distributed abnormally to the two daughter cells there is no possibility of bringing about a normal redistribution of these structures. Experiments with the eggs of lower animals indicate that various environmental changes cause abnormalities in the separation of daughter chromosomes and in their fusion to form daughter nuclei. Subjected to various abnormal stimuli such as pressure, electric currents, unusual thermal conditions, unnatural chemical solutions, changes are produced in the type of cleavage, in the orientation and structure of mitotic figures and induction of polyspermy, together with various abnormalities of the chromatin and chromosome content of the cells. It is generally held that the human ovum follows the same general course in development as the germ cells of lower animals. Setting aside, therefore, those cases of defect which may be traced to intrinsic or hereditary factors, clinical observations as well as experimental deductions would indicate that the extrinsic elements surrounding the human germ-cell in syphilitic or tuberculous mothers or those with abnormal physiological secretions are amply able to leave their imprint of potential defect upon the plastic structure of the embryo. Again, if it is held that the egg cytoplasm fixes the general type of de-

velopment, while the sperm acts primarily in contributing details such as are exemplified by mental peculiarities, it is evident that the father's contribution to the fertilized germ-cell might also induce defect. Various studies have shown that environmental agents, such as alcohol, profoundly modify the germ-cells. "Thus the external as well as the internal factors are to be considered, not only in individual or embryonic development, but also in heredity. Experiments demonstrate for mammals that either the spermatozoön or the ovum may be experimentally injured or modified in such a manner as not only to give rise to abnormal development in the resulting embryo, but the effects of the injury may be transmitted from generation to generation, until an affected line actually fades out through degeneracy and sterility as a result of the transmitted condition." This tendency among students of genetics to give a broader interpretation to the influence of environment is well expressed by Morgan in his experimental studies on Drosophila: "If we measure or weigh or classify any character shown by the individuals of a population, we find differences. We recognize that some of these are due to the varied experiences that the individuals have encountered in the course of their lives, *i.e.*, to their environment, but we also recognize that some of the differences may be due to individuals having different germ plasms."

The various factors here reported show conclusively that the prenatal environment of each of these individuals was modified sufficiently to induce, in any organism, profound structural changes. The objection may be raised, however, that this offers no explanation of the specific defect. Why epilepsy instead of idiocy or a monster? To this one can only reply that the various objective results of the process seem to differ in degree only. All cerebral disturbances presuppose some specific defect of organization. Idiocy and epilepsy are frequently synonymous, and the epileptic has many physical stigmata which are the hall marks of the monster. It is of interest to note in this connection that recent investigation points to the conclusion that the primary causes underlying the origin of monsters in man and other mammals are autogenous chemical modifications of the parental blood. Working with butyric acid and acetone, Werber concludes that all morphological deformities of sensory organs may be induced through the blastolytic action of the modified environment.

In the absence of precise experimental data revealing the exact nature of the epileptic predisposition, a biologic analysis is able to present results of practical application from the standpoint of social adjustment. It is possible, for instance, to answer the questions, so vital to one seeking explanation of suspicious conduct, "How early is it possible to recognize traits indicative of ill-balance in a child?" Through what factors of behavior may latent epilepsy be anticipated? A partial answer, at least, is found in the data here presented.

Significant incidents of behavior as the child emerged from infancy are the following:

Early Observations of Instability.

Case A. Frequent slight "worm-fits," tantrums, bed-wetting, somnambulism. Teeth, palate and ears stigmatic.
" B. Mentally retarded, somnambulism, speech defect. Ears stigmatic.
" C. Tantrums, bed-wetting, precocious day dreaming.
" D. Tantrums, somnambulism, bed-wetting, recurrent dreams.
" E. Tantrums, rolling out of bed during sleep, bed-wetting. Ears stigmatic.
" F. Early persistent masturbation, thumb-sucking, tantrums, always bumping head. Cerebral hemorrhage at birth. Teeth, ears and palate stigmatic.
" G. Early stealing and lying with definite object in view, over-emotional, bed-wetting.
" H. Bed-wetting, rolling out of bed during sleep. Various stigmata.
" I. Highly emotional, bed-wetting, rolling out of bed during sleep, day dreamer. Various stigmata.
" J. Highly precocious in studies, bed-wetting, rolling out of bed during sleep, night terrors.
" K. Tantrums, "forgetful," spasms at time of teething.
" L. Night terrors, recurrent dreams, somnambulism, rolling out of bed, speech defect. Ears stigmatic.
" M. Night terrors, dreams, somnambulism, bed-wetting, poor adaption at play, talking "strangely."
" N. Early mental retardation of marked degree, spasms after food.

Following is the numerical distribution of the factors brought out in analysis:

Chronological Age.		Mental Age.	
Years	Number	Years	Number
7	2	3	2
8	2	5	4
9	1	6	1
10	1	7	3
11	3	8	3
12	3	9	4
13	2	10	1
14	1	11	1
15	1	13	1
16	1		
17	1		
22	1		
26	1		

Intelligence Quotient	Classification (Terman)	Number
100	Normal	3
90	Dull	2
70	Borderline	5
Below 70	Feeble-minded	10

Early Mental Condition as Shown by School Progress.

Backward	11
Normal	8
Precocious	1

PHYSIOLOGICAL DEVELOPMENT

Prepubescent	7
Pubescent	8
Mature	5

SEX.

Male	10
Female	10

	RANGE
Teething began	3 mos. to 1 yr.
Walking began	9 mos. to 2 yrs.
Talking began	7 mos. to 2 yrs.

Neurotic traits:	
Nocturnal enuresis	13
Rolling out of bed	7
Night terrors	3
Recurrent dreams	9
Somnambulism	6
Masturbation	7
Persistent thumb-sucking	1
Tantrums	6
Over-mischievous	5
Speech defect	3
Violent fears with excessive emotional reaction	9
Anomalous teeth	9
Stigmatic palate	12
Stigmatic ears	18
Absent lobe	2
Darwinian tubercle	3
Heavy, right-angular	7
Satyriform	2
Asymmetrical	3
Unrolled helix	1
Immediate family history of:*	
Drink	1
Drugs	1
Insanity	1
Epilepsy	2
Spasms	2
Rheumatism	7
Tuberculosis	8
Severe recurrent headache	5
Cancer	3
Chorea	1
"Skin disease"	1†
"Sex offender, habitual (mother)	1
"Uncontrolled temper"	5
Remote hereditary history of mental defect:	
Epilepsy (maternal sister)	1
Epilepsy (paternal grandfather)	1
Chronic headache (p. and m. sibs.)	4
Convulsions (maternal sister)	1
Illegitimate	1
Instrumental delivery	3
History of family quarrels during pregnancy	4‡
Wassermann reaction:	
Positive	9
Doubtful	4
Negative	5§

* No family history obtained was free from one or more of the diseases indicated under "Family History."
† Offspring's Wassermann positive.
‡ Three of these at two months.
§ Of the latter, two were from highly neurotic families and one from a tuberculous family.

Attacks attributed by parent to:	
"Fright"	1
Traumatic causes	4
"Punishment"	1
Unknown causes	14
Attacks dated from:	
Birth	2
Infancy	12
2 to 8 years	6
Aura (Seventeen able to give satisfactory response)	
Referred to abdominal region	15
Referred to head	2
Intensive visual image	2
Headache following	5
Seizures	
Nocturnal and diurnal	9
Nocturnal	2
Diurnal	9
Ability to abort attacks frequently	4

Although various measurements of interest from an anthropological standpoint were taken, only those relating to cranial size will be considered here. Following are the head measurements:

	MEAN	MEAN VARIATION
Length (glabella to occipital protuberance)	18.1 cm.	.7 cm.
Breadth (max. temporo-parietal)	14.3 "	.69 cm.
Height (inter-auricular line to bregma)	13.1 "	.665 cm.
Circumference	53.0 "	.22 cm.

These figures correspond to the average for normal children.

The physical examination relating to the incidence of general somatic disease showed no unusual disturbance in the circulatory or respiratory organs. Evidence of a rachitic tendency was seen in several but no definite history to this effect was obtainable. Two showed traces of albumen with no casts or other clinical symptoms of renal disease. In none was the thyroid palpable. Two had marked exophthalmos with no other clinical manifestation of disease. In a majority the faucial tonsils were hypertrophic but not sufficiently so to obstruct normal activity. The pharyngeal tonsil, or "adenoids," was present or had been present in all, markedly obstructing the breathing of several. The superficial and deep reflexes were exaggerated in all. Several had visual defects which had been adjusted. In somewhat more than half the number the teeth were remarkably well preserved. In none were there evidences of an active tubercular process. None showed morphological evidence of hereditary syphilis. Although one subject had suffered from an attack of anterior poliomyelitis there was no residuum.

The frequency of seizures is indicated in the following table:

I. MILD GROUP.

		PRESENT CONDITION
8-year-old girl	Frequent during infancy.	Only once in 6 years past. I.
13-year-old girl	Daily during childhood.	Only once in 2 or 3 weeks. I.
11-year-old boy	Frequent in infancy.	Once or twice monthly. N.
17-year-old girl	Daily in childhood.	Two or three monthly. I.
7-year-old girl	Frequent in infancy.	Once in two weeks. D.
26-year-old girl	Once in several months since infancy.	I.
11-year-old boy	Daily during childhood.	One every night. I.
22-year-old girl	Every two days during childhood.	Once monthly. I.
11-year-old boy	Every one or two weeks since birth.	D.
13-year-old girl	Once a month since infancy.	D.

II. SEVERE GROUP.

		PRESENT CONDITION
14-year-old boy	Since infancy many mild diurnal and one severe nocturnal.	D.
12-year-old girl	Frequent since 2 years old.	Daily now. Status with complete loss of consciousness for 30 hours. D.
7-year-old boy	Since infancy.	Scores of mild diurnal and 1 severe nocturnal. D.
12-year-old boy	Since infancy.	One severe weekly. D.
10-year-old boy	Since birth.	A score daily. D.
12-year-old boy	For past 2 years, only, 1 to 3 diurnal and 2 severe nocturnal.	D.
16-year-old girl	Since infancy.	One severe daily. I. (Often a month free.)
9-year-old boy	Since infancy.	Two or three diurnal and two nocturnal. I
8-year-old girl	Since infancy.	Ten diurnal and four nocturnal. D.
15-year-old boy	Since infancy.	1 to 4 diurnal; 6 to 25 nocturnal. D.

I, Improved 8
D, Deteriorating 11
N, Unchanged 2

Following are the analyses of social behavior as exemplified in several of the protocols:

M. A. A low-grade, 8-yr.-old, moronic girl, physically overdeveloped. Over-active, inattentive, very approachable, laughing or grimacing constantly unless engaged at work or play. Easily interested in subjects for which the normal child is adapted. Delights in and discusses "movies." Makes bed under supervision and does simple housework. Untidy. No interest in clothes for herself but rather for her doll. A good mixer, an unusual mimic. A leader of other children. Initiates new situations, plays school, hospital and watches desquamation of doll ill with scarlet fever. Very mischievous, prevaricates but never steals. Generous. Had tantrums but now anticipation of punishment in bed causes temper to subside. Whimpers much. Will not be driven but may be reasoned with. Has been an excessive masturbator (several times daily) but shows much improvement through education. Does little school work, but thrives out of doors. Some violent fears, especially other children in spasms, yet so fascinated as to be riveted to the spot, screaming and kicking, eyes protruding, unable to move. Reactions to food and sleep normal. Few attacks now.

E. A. An attractive, delicate girl of 13, of normal intelligence. Highly emotional, weeping during examination but voluntarily returning for its completion. Adapts herself well to others. Fond of fairy tales but "detests love stories." Over-fond of babies. "Affectionate," loyal, but will not assert her own independence. Unjustly accused, she fails to clear herself but remains in silent, tearful mood. Various neurotic traits have been overcome voluntarily. Since sexual maturity a year ago seizures much less frequent. An excellent worker. Very eager to recover completely. Responsible, thoughtful of others, truthful, neat, very consistent, eating no meat in order to hasten recovery. Good student. Many dreams of being pursued, of wetting bed, or having to go home where environment is poor.

R. B. A boy whose chronological and mental age is 11 yrs. Head circumference of 56 cm. is in excess of normal. Cruel, obscene, tormentor, thief, tease; lies, swears and kills birds for fun. Does well in school though attention is poor. Fond of embroidery and sewing. No fears. Sullen, vindictive, not easily approached. Masturbates but no other neurotic traits. Reactions to food and sleep normal.

E. B. A coarse girl of 17 yrs., mentally 9 yrs. Reacts very slowly but a good worker. Over-emotional, fond of boys and thinks she may marry. Quarrelsome, impulsive, neat but cares little for clothes though has obsession for white teeth (hers are distinctly wolf-like). Various fears—the dark, animals, etc. Very fond of children.

M. K. A thin, spare girl of 26 yrs., mentally 9 yrs. Very loquacious. Obsessed by family troubles of many years ago. Extremely religious, praying much. A good worker, responsible. Severe temper, a residuum of early tantrums, which had been utilized in obtaining her desires. Various peculiar food reactions; is also a somnambulist. Always same aura: A visual image of a large, red moon slowly changing to an enormous deer with threatening antlers. As soon as this image runs into a hole a seizure begins. Sometimes long delayed.

E. T. A coarse, masculine girl of 22 yrs., mentally 9 yrs. Early history unknown. No neurotic traits now. Seizures infrequent but very severe. Hard worker, responsible, likes boys. Fond of detective stories only. Very religious. Sullen but tractable. Has overcome bad habits. Attention good.

If the behavior of an epileptic is analyzed his unusual conduct cannot be explained consistently and excused upon the ground that "all epileptics indicate a bad adaptation to their environment." From the very beginning of development his environment has been unfavorable, according to prevailing standards of conduct. Manifestly his adaptation to a normal environment is poor but his environment has never been normal. Owing to inability from the first to react to a normal instinctive life his reflex activities are in a primitive, unconditional state. Thus the various manifestations of the primal demands of nutrition, self-preservation and reproduction, unable to functionate in the normal manner, because of abnormal mechanisms, exhibit their rebellious disposition in the incident of the epileptic seizure with its attendant toxaemia and its train of anomalous phenomena. This fact is adequately shown in the table of neurotic traits prevailing in the present group of subjects, and may be traced in one form or another in each analysis of instinctive behavior. The fact that instincts in the epileptic operate precociously renders his conduct less deserving of censure. While the higher mental processes also may be developed precociously in a large number of cases, it is the method of response to the vegetative processes which must elucidate the mental endowment of these subjects. The relation of these instinctive reactions to the chief objective phenomenon—the seizure—is manifest in the frequent cessation of attacks following castration or after the advent of sexual maturity or, as in a case here reported, after indulgence in auto-erotic practices has become established. Again the instinct of self-preservation, with its emotional reaction of fear, is rarely well adjusted in epileptics. As an interesting coincidence may be cited two of the cases here reported, the first seizure following an intensive appeal to flight from pursuing enemies. The ease with which a seizure could be induced through the reaction of emotional stimuli characterized a large percentage of the subjects. The ability frequently to abort an attack following a definite aura, by an appeal to the digestive or nutritional apparatus, together with the remarkable frequency with which digestive phenomena usher in the premonitory phenomena, further illustrates instinctive tendencies in the evolution of the true seizure. The epileptic's failure to make a good social adjustment follows as a logical consequence of his biologic defects. Conduct results from the activity of emotions and impulses springing as natural growths from the primary instincts. As a result of the organization of these emotions, the sentiments develop,—systems of the utmost importance in the formation of character. Consequently the child having epilepsy, whose basic instincts and mechanisms are at fault, is deprived of these organized elements of the affective processes, into whose composition enter the principal emotional dispositions of the instinctive life. The natural result of this defect is an unstable and incomplete social adjustment.

SUMMARY.

1. In the foregoing analysis an attempt is made to emphasize the importance of the more intensive, biologic examination of children—in this instance, those afflicted with true epilepsy.

2. An explanation of epileptic phenomena is sought in the reactions of noxious stimuli upon the germ cell, whose environmental maladjustment appears to induce abnormal, morphological differentiations in the embryo with the power of hereditary transmission of tendencies toward defect, to succeeding generations.

3. An analysis is made of various phenomena in the social, somatic and psychic behavior of twenty subjects suffering from true epilepsy. Attention is called to these as evidence of instinctive instability.

4. The recognized hypothesis that structural abnormalities are concerned in the production of epileptic seizures is accepted and the unconditional reflex is suggested as an element in their mode of functioning.

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SURGICAL TREATMENT OF LARYNGEAL CANCER.

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IN presenting this subject, only two procedures will be considered, viz., total laryngectomy and hemi-laryngectomy. The attempt to remove malignant growths by intra-laryngeal methods, advanced as these now are, is to be condemned. The eradication of cancer by thyrotomy is an ideal method, conserving the normal breath-way and a varying degree of audible speech. But it is applicable only in the most incipient cases. It is conceivable that improved diagnostic skill on the part of the profession at large may bring these cases to operation at a stage sufficiently early to justify a more frequent use of thyrotomy. My experience with it has been discouraging, giving a large return of hopeless recurrences.

Recurrence after thyrotomy means increased malignancy and irreparable loss of time. I firmly believe that the surgeon is given but one chance to eradicate cancer, wherever situated.

In border-line cases the patient's feelings may determine between total and partial removal, some preferring even death to a voiceless existence. When in doubt and the choice of operation is left to the surgeon, the larynx should be split and its interior inspected, then partly or totally removed, as seems advisable.

The degree of malignancy, as determined by the history and appearance of the growth, must be taken into account. When any doubt exists as to the best procedure, I would strongly advocate the more radical one. If the growth approaches close to the median line in the anterior or posterior commissure, total laryngectomy is indicated. If the arytenoids be involved, a liberal portion of the anterior part of the mouth of the esophagus should be resected with the larynx.

In total laryngectomy, I prefer the one-stage operation for the following reasons. When a preliminary tracheotomy is done and the trachea surrounded with gauze to establish peritracheal adhesions, the object aimed at is to prevent extension of infection to the mediastinum. This possible good is out-balanced, in my opinion, by the fact that at the second stage we are forced to operate in a well-established septic field. Another objection is that a primary union between the skin and tracheal mucous membrane is seldom possible when the trachea has been mutilated and the surrounding tissues infected. A clean union here means that the patient may dispense with the tracheal cannula. To wall off the trachea at the first stage and to leave it closed, would, I believe, be a more logical procedure in the two-stage operation.

Many points of interest arise in laryngectomy which, owing to limited time, I may but touch upon.

I am often asked, what is the mental state of these patients after partial or total laryngectomy? Their acceptance of the new conditions under which they are forced to live has been to me a great surprise. Those who have escaped a recurrence, or who think they have escaped it, are extremely grateful and uniformly cheerful.

Several of my laryngectomies have developed a remarkable degree of speech. Two of them have acquired a whisper, conveying words at short range.

In what cases should the gland-bearing tissue of the neck be removed? Unless this is thoroughly done, it is worse than useless. By the removal of gland-bearing tissue, I mean that all the fat and fascia of the region should be taken away by a painstaking dissection, carried well backward into the posterior triangle and upward into the submaxillary region and downward to the clavicle.

When the arytenoids are involved, it is almost certain that the disease has entered the lymphatics of the neck, necessitating their removal. If the median line is encroached upon, the dissection must include both sides.

How much of the esophagus may be removed without damage to its function? In all cases I remove the anterior part of the mouth of the tube, the extent being determined by existing conditions. At least one inch downwards anterior and one third of its circumference has been resected in five cases, without producing subsequent stricture.

Primary union is the exception in total laryngectomy. The wound infection in all my cases began above at the pharyngeal closure, manifesting itself between the third or fourth day. Liberal opening with drainage prevents or retards its spreading downwards to the danger zone behind the tracheal stump. This retardation is an important factor in the prevention of mediastinal infection, giving the retrotracheal region time to become walled off. Wound infection with sloughing may not, after all, be an unmitigated evil, since it may, by the eradication of disseminated cancer cells, tend to retard or prevent recurrences. It has, I believe, done so in two of my cases.

In no case have I failed to secure primary union in the subsequent plastic repair following even extensive destruction of the tissues. The most important point here is to delay operation until long after the suppurative stage has passed.

Shock, pneumonic sepsis and mediastinitis are the ever-present dangers of laryngectomy.

Shock. Very old and decrepit individuals should not be subjected to this operation. As short and light a general anesthesia as possible should be given. In selected cases, I would suggest the use of local anesthesia carried as far as can be done without pain, that is, to the skeletonization of the larynx and trachea, then light general anesthesia during the detachment of the larynx from the neck and the closure of the pharynx. The operation may then be finished under local anesthesia. Thus the ether period should not last more than twenty to thirty minutes.

Pneumonia—short and light general anesthesia—the prevention of the entrance of blood into trachea during operation and of wound drainage after operation, and the removal of tracheal secretions by suction, materially lessen the danger of pneumonia.

Sepsis. Diseased teeth and chronic sinusitis may be overlooked factors in the production of virulent septic wound infection in any case where the pharynx is opened. I strongly advocate the removal of diseased teeth at a period as long before the operation as possible.

The removal of tissue for diagnosis is to be avoided, if possible. Syphilis must be excluded.

Before describing the technic I shall ask your

permission to digress and point out what seem to me to be some of the important points in the management of laryngectomy.

1st. The operation should be so conducted as absolutely to prevent blood entering the trachea during the operation.

2d. Wound contamination from the open trachea and pharynx should be guarded against during the operation.

3d. In total laryngectomy two lines of drainage are indicated,—one just below the pharyngeal closure and the other just behind the tracheal stump, where it is secured to the skin. The latter is of prime importance, crossing, as it does, the direct path of mediastinal infection. In this situation, unprotected, weak iodoform gauze is used to promote adhesions. If the infection from above can be delayed a few days (and in all of my infected cases it has been so delayed), the danger zone behind the trachea is eliminated and a primary union between the trachea and skin promoted.

4th. A nourishing and properly balanced diet is essential from the start. The only means of accomplishing this is by the use of the feeding-tube, introduced into the esophagus through the nose and left in place until the wound is healed. In one case the patient was thus fed for two months without producing esophagitis.

5th. When infection occurs, strict attention to drainage is imperative. The dressings should be changed every two hours or oftener during the day and every three or four hours during the night. At each dressing a negative pressure pump is used to remove the pus and tenacious mouth and pharyngeal secretions from the wound.

6th. The total absence of lung complications in my cases was partly due, in my opinion, to the use of inter-tracheal suction applied through a small catheter, introduced as far down as the bifurcation. This is used as indicated by the amount of tracheal secretion at least every hour or two for a few days following the operation.

Two physiological principles underlie the expulsion of secretions from the trachea, namely, normal ciliary action and normal cough. By normal cough I mean the compression of air behind the closed glottis and its expulsion by a sudden release of this closure.

In the open trachea normal cough is impossible and, following operative traumatism, the ciliary action of the tracheal mucous membrane is at least temporarily in abeyance. Hence there is a tendency for secretions, much increased after laryngectomy, to enter the lungs, producing well-known consequences. On this argument I contend that intratracheal suction rests on a logical basis.

The operation for hemilaryngectomy is my own. Its radical departure from the accepted method of Gluck makes me put it forward with some hesitation. It has been done in six cases with six surgical recoveries. In all but one the larynx remained sufficiently open for normal breathing. In one there was some contraction, causing slight dyspnoea on exertion, and audible breathing at all times.

The operation for total laryngectomy is essentially the accepted method of the one-stage operation, with some modification of my own in the technic and in the after-treatment.

OPERATION FOR HEMILARYNGECTOMY.

Operation. If it cannot be decided whether a thyrotomy or a hemilaryngectomy is to be done, the larynx should be first opened for inspection. Then, if hemilaryngectomy is elected, before proceeding further with the operation, the trachea is opened just above the sternal notch. Two separate incisions are made, one for the laryngectomy and another for the tracheotomy. The first incision begins well up under the chin and extends to a point just below the cricoid ring in the centre line. This is deepened until the thyrohyoid membrane, the thyroid and the cricoid cartilages are exposed. Care is taken not to separate the tissues laterally. The larynx is then opened in the center line, its interior cocainized and inspected. Blunt hooks or retractors are used in order to avoid injury to the edges of the cartilage, especially on the healthy side.

A hemilaryngectomy being decided upon, the trachea is next opened as low as possible. The second incision is here made, over the end of the sternal notch and up to within one inch, or more, if possible, of the first incision. Care is taken that a liberal bridge of tissue is left between the two incisions. The trachea is opened and a large tracheal cannula inserted. Into this is fitted a rubber tube, eighteen inches long, through which the anesthetic is continued. Before inserting the tracheal cannula, two stout silk threads are passed through the edges of the tracheal incision, one on each side and laid one on each side of the neck. The wound is then closed fairly close up to the cannula. The object of the silk threads is to control the tracheal opening, in case the tube should get displaced or come out. Traction on these threads opens the trachea. This precaution I always take in low tracheotomies.

The larynx is again opened with blunt hooks or narrow retractors. The trachea is cocainized and tightly packed with gauze. The skin, cervical fascia, and pre-tracheal muscles covering the diseased half of the larynx are carefully dissected away from the cartilage, taking care to keep them all in one flap and not to injure the inner surface, which is composed of the pre-tracheal fascia, as this surface is to form the new laryngeal wall. This flap is gently held away while the removal of half of the larynx proceeds. The thyrohyoid membrane is slit laterally and the trachea divided below the cricoid ring on the diseased side. A

large wad of iodoform gauze is packed into the pharynx to prevent contamination from that quarter. This is removed through the mouth when the operation is near completion. The loosened half of the larynx is now retracted, well away from the centre line. If the mucous membrane over the posterior commissure and arytenoid is healthy it is saved and lifted away from the cartilage beneath. This mucous membrane dissection is carried backwards over the posterior surface of the arytenoid and down towards, and sometimes into, the anterior aspect of the mouth of the esophagus. The diseased half of the larynx is now removed in the usual way, being careful to save the mucous membrane flap outlined above. All bleeding points are controlled by catching only the vessels and by tying with an 00 iodized catgut. Stress should be laid upon careful and non-traumatic hemostasis. I would here digress to say that the usual rough handling of tissues, so frequently seen in general surgery, is entirely out of place in this operation. Much in the ultimate result depends on gentleness. The next step in the operation is to endeavor to cover as much as possible of the raw surface left by the hemilaryngectomy with mucous membrane. The flap mentioned above is brought downward and inward. It may sometimes be further enlarged by splitting the mouth of the esophagus. A considerable part of the raw surface left by the removal of half of the larynx may thus be covered. Stitches of fine, iodized gut are placed so as to hold the flap in its new position, care being taken that tension is avoided. The tracheal packing is now removed and the trachea cleared of blood clot down to the cannula. A long, half inch, folded strip of vaselined gauze, thoroughly impregnated with bismuth, is packed into the trachea, filling it from the cannula to its open end. This strip should be folded back and forth in the trachea, so that its removal may be more easily accomplished, and it should be packed in tight and even. To prevent the lower end of the gauze from falling into the trachea and to facilitate tight packing, a drawing-string is run through the gauze, being attached to its lower end. When the packing is in place this string is drawn up, thus approximating the two ends of the gauze. This corks the trachea against secretions from above. The end of the strip is brought out at the lower end of the laryngeal incision. The larynx is packed loosely with a strip of iodoform gauze, the end of which is brought out at the same point as the tracheal packing. The gauze in the pharynx is removed through the mouth and the feeding-tube is inserted through the nose and directed into the esophagus.

Closure. The mesial edge of the pre-tracheal muscles (the under surface of the lateral flap) is now united to the mucous membrane of the healthy side of the larynx, along its anterior median aspect, using fine iodized gut. The skin edges are united with silkworm gut. The wound is left open at its lower angle, wide enough to give drainage room for the gauze ends. Two provisional stitches are placed here to be tied after these strips are removed, thus entirely closing the larynx. A sheet of rubber tissue, covered on both sides with gauze, is glued by its edge with collodion to the neck, across the bridge of skin separating the two wounds. This attachment should extend laterally one-half way around the neck. Its object is to act as a barrier between the laryngeal wound and the tracheal cannula, keeping the drainage of the one away from the other. The quantity of drainage that comes from the laryngeal wound saturates several pads of gauze a day, and makes one feel that if only a fraction of it should find its way into the lung through an open trachea, pneumonia might well be the result. The bismuth in the trachea plug keeps it clean and odorless for days and with the vaseline effectually turns the drainage out towards the surface.

After-Treatment. There are a few points in the after-treatment on which I would lay emphasis.

Paramount, in this regard, is a liberal and supporting diet. Without the use of the esophageal tube it is impossible to give enough food to support these patients through the important early days of convalescence. The diet I prescribe is as follows: Oatmeal thoroughly cooked and strained, mixed with milk. To the above may be added milk-sugar and raw egg, and occasionally melted butter. Six ounces of this thick mixture are forced through the tube with a piston syringe every four hours, followed by four ounces of water. Fruit and vegetable juices are later added.

The esophageal tube may be retained for weeks without injury, providing it is washed out after each feeding, as stated above. If by accident it should come out and cannot be replaced, I would not hesitate to do a gastrotomy, so important do I consider liberal feeding. Rectal feeding, in my opinion, should not be relied upon. It is merely an effective way of pretending to do something.

In some cases tracheal and bronchial secretion is much increased. In one case, a diabetic, crusts and plugs of inspissated muco-pus formed in the trachea and primary bronchi and had to be removed with a bronchoscope and forceps twice a day, to obviate suffocation. A negative pressure pump is used to unload the trachea as often as indicated. Strong suction may do much injury to the mucous membrane and should be avoided.

The dressings need constant attention. They should be changed every few hours. The patient's position should be frequently shifted from side to side and from the recumbent to the reclining posture.

When the laryngeal drain should be removed

depends upon the amount of drainage. It should be kept in as long as the serous flow continues. In my limited experience this is from two to four days. I remove the tracheal plug later for the reason that the blood and serum which flow into the larynx when disturbed by the drainage removal is thus prevented from entering the trachea. The tracheal plug may remain from three to five days. The tracheal cannula should be removed just as soon as the new larynx is open for comfortable breathing. If there is much tracheal secretion, tracheal drainage is best served by keeping the cannula in and using suction.

OPERATION FOR TOTAL LARYNGECTOMY.

At the cancer age clean mouths are the exception. Carious teeth and Riggs' disease make this cavity a veritable cesspool into which our operative field must extend, and out of which must come almost unavoidable infection. Before operation this condition should be remedied as far as time will allow. Chronic sinusitis must be borne with since it would be quite impossible to correct it in the time given. Any effort in this direction would but change a chronic into an acute process, with added risk of wound contamination.

If the patient will submit, the preliminary part of the operation may be done under local anaesthesia, carried as far as the tolerance of the patient and the skill of the operator permit. When the larynx is filled with carcinoma and the breathing is obstructed, local anaesthesia obviates the danger of suffocation and of an emergency tracheotomy during the early stage of the operation. Such a tracheotomy would mutilate the tracheal stump, making the subsequent skin and tracheal union defective. It is quite possible to skeletonize the larynx and upper portion of the trachea without pain. At this point it is better, I believe, to begin the general anaesthetic rather than attempt the removal of the larynx by the local method, since gagging, vomiting and coughing hinder the surgical procedure and add another infective factor.

If scopolamine-morphine has been given, great care in the administering of the general anaesthetic must be taken to guard against respiratory failure. I am inclined to use as little as possible such noisy adjuncts as the insufflation anaesthesia apparatus which interferes with the close observation of the patient's respiration. The removal of the larynx and closing of the pharynx is done under light ether anaesthesia. The remaining steps of the operation are better done under local, with an occasional whiff of ether if needed.

When, owing to the extent of the disease, a block dissection of the neck is indicated, the procedure is as follows:

An incision from the chin to the sternal notch is made, including all the tissues down to the deep fascia. From the upper end, extending laterally on one or both sides, a second incision is carried outward across the sternomastoid just under the mastoid process. The third incision begins at the lower end of the first one and is carried outward and downward, crossing the clavicle near its outer third. The object aimed at is to make the flap as wide at its base and as thick as possible. My experience with the rectangular flap, generally used, has been that the inner edge is prone to slough from lack of nutrition. Much time is often wasted in trying to save the sternomastoid muscle. It is my custom to remove it entirely, thus gaining an immediate and good exposure of the deep structures of the neck. It is detached below and with it all the underlying gland and lymphatic bearing tissues are removed *en masse*. The wound is packed with gauze and the removal of the larynx proceeded with.

When a block dissection is not indicated, the procedure is as follows:

The first incision, as described above, is made. From its upper end two incisions are carried laterally for about one inch. This wide opening on top gives better access to the work of closing the hypopharynx. In long, thin necks the lateral incisions may be dispensed with. The thyroid bridge is tied and cut. In three cases I have been obliged to remove a portion of the thyroid gland overlying the trachea. The larynx and trachea are skeletonized and the thyrohyoid membrane exposed. The greater wings of the thyroid cartilage are cut and left in position. All vessels are tied and the wound made perfectly dry. The trachea is cut across just below the cricoid cartilage, being careful to secure all bleeding points so that no blood enters the trachea. A rubber tube ten inches long and large enough to fit tightly is inserted into the trachea. Through this tube the anaesthesia is continued. The cleavage plane between the larynx and esophagus is now found and the larynx separated upwards as far up as is compatible with the extent of the growth. If the cancer extends backwards into the esophageal mouth, that portion of the latter lying in juxtaposition to the larynx must be removed. The larynx is allowed to drop back into position and the thyrohyoid membrane is cut across, opening the hypopharynx; a large piece of gauze, either of iodoform or wrung out of a one per cent. Dakin's solution, is crowded into the pharynx, filling it and the mouth. The larynx is removed, either taking or leaving the epiglottis. The hypopharynx is closed with two lines of chromic gut sutures. Before the first line is entirely closed the gauze is removed from the mouth and a feeding-tube of suitable sized rubber is passed through the nose and guided into the esophagus to a depth of five or six inches. I have seen persistent vomiting caused by inserting the tube too far. Two lines of drainage are indicated—

one just below the hypopharyngeal closure and the other behind the tracheal stump. They are inserted through stab wounds in the flaps. If a gland dissection has been done, a third drain is placed in the lower outer angle of the wound. The wound is then closed in layers with number two iodized gut, or it may be closed *en masse* with silver wires piercing the tissues deeply and clamped with large shot.

The tracheal stump is pulled forward and two retention sutures of silkworm gut or silver wire are passed around the third or fourth ring, using a sharply curved, stout needle. The ends of these are plunged through the tissues and brought out about one inch from the central incision on either side of the trachea. They are tied around a piece of gauze, sufficient tension being exerted to hold the stump forward. A cuff of mucous membrane is made at the tracheal end by removing the cartilage of the first ring. The subcutaneous fat is removed from the skin in the immediate vicinity of the stump to facilitate bringing the skin and mucous membrane together. Union is made with horsehair on the front and sides of the stump and with silkworm gut behind. Tension must be avoided in joining the skin and mucous membrane. A large cannula wound with iodoform gauze and smeared with vaseline is inserted into the trachea, fitting its caliber snugly—an eight inch square of rubberdam, perforated in the centre is snapped over the exposed end of the inner tube of the cannula. Behind this apron the wound is dressed in the usual way. The cannula inserted, as above described, effectively corks the trachea, preventing secretions from being coughed up over the tracheal skin union. The rubber apron catches all tracheal secretions and serves as a barrier between the end of the cannula and the wound of the neck.

After-Treatment. Feeding and the care of the tracheal secretions are set down under the after-treatment of hemilaryngectomy. As wound infection is the rule in total laryngectomy, its proper surgical management is, perhaps, the most difficult and most important part of our task. Infection begins, as a rule, at the hypopharyngeal closure. To delay too long in opening the upper part of the wound is a fatal error, since the virulence here encountered is high and the infection spreads rapidly. After the wound is opened the packing should be changed every two to four hours and the field cleared of secretions by suction. The continuous or intermittent use of hypertonic salt solution does much to promote exosmosis and thin the discharges. If the infection extends to the tracheal region constant attention on the part of the nurses and surgeon is required to prevent the inhalation of pus and its extension to the mediastinum. All burrowing pockets are carefully followed, frequently packed and cleansed by suction. Nowhere in the body, with the exception of the brain, is uncontrolled infection more serious than in the neck. Such success as has come to me in this work has been, I believe, due to the time and pains taken in the after-treatment, to the use of very little general anaesthesia, and to a constant effort towards the elimination of traumatism from the operative technic.

THE MASTICHE AND POTASSIUM PERMANGANATE TESTS APPLIED TO THE CEREBRO-SPINAL FLUID OF THE INSANE.*

By Lawson G. Lowrey, A.M., M.D., Boston.

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A. In the *Berliner Klinische Wochenschrift* for July 26, 1915, G. Emanuel describes a new colloidal reaction for use in examining cerebrospinal fluid.

The technic is as follows: Dissolve 10 gms. mastiche in 100 cc. of alcohol. Filter. Take 1 cc. of the above stock solution and add to 9 cc. of alcohol. Insufflate rapidly into 40 cc. of distilled water. This is the reagent. It is a pearly gray, opalescent solution with a slight bluish tinge. One cc. of 1.25 per cent. sodium chloride solution will flake out 1 cc. of mastiche reagent. Set up 5 tubes. In the first put 1.5 cc. of the 1.25 per cent. sodium chloride solution: In the others, 1 cc. To the first tube add 0.5 cc. of spinal fluid. Mix. Transfer 1 cc. to the second test tube: mix; and so on for the first 4 tubes, throwing away 1 cc. from the fourth. The fifth is used as a control.

Now add 1 cc. of the mastiche reagent to each tube. A positive reaction is evinced by a prompt precipitation in all 5 tubes. The reading is made at the end of 12 hours. This occurs in paresis or other syphilitic nervous disorders. In 32 cases Emanuel found the test negative in all but the 14 syphilitic. One case of dementia praecox, 1 of traumatic neurosis, and 1 of hemorrhage gave faintly positive reactions, but not to be compared with the pronounced reaction of paresis.

On account of the simplicity of the test and the statement that it is as reliable as the gold reaction, it seemed worth while to try it in the laboratory. Fluids from 35 cases were examined, the test being controlled by the routine tests of this laboratory (Wassermann reaction, albumen and globulin content, cell count and gold reaction).

The dilutions were made, the reagent added and the tubes thoroughly shaken. They were then examined at the end of 5 minutes: after one to one and a half hours, and finally at the end of 18 hours. As a general rule no change or at most a very slight change occurs between the hour and the 18 hour observations.

In 3 cases, 10 tubes were set up; the 10th used as a control: the other 9 containing fluid

* A contribution to the William Leonard Worcester Series of Danvers State Hospital Papers, presented November 19, 1915.

dilutions of 1 : 2 to 1 : 512. In all 3 cases whether positive or negative the last 5 tubes precipitated—*i. e.*, the amount of restraining (?) substance in these dilutions of the fluid was not sufficient to prevent precipitation.

Three general types of reaction may be recognized. In the first the completed test solution is "clear" (*i. e.*, only slightly opalescent); in the second the solution is "cloudy" or opaque; in the third flocculent precipitation occurs, the supernatant fluid being clear.

The results of the test are given in the appended table (I) in which the fluids are arranged according to the gold reactions.

TABLE I.

	Gold Positive	1	2	3	4	Control 5
M.	General paresis	cl	cl	cl	cl	p
F.	General paresis	p	p	p	p	p
M.	General paresis	p	p	p	p	p
M.	General paresis	p	p	p	p	p
M.	Tabo-paresis	p	p	p	p	p
M.	General paresis	p	p	p	p	p
M.	General paresis	p	p	p	p	p
M.	General paresis	cl	cl	cl	cl	p
M.	General paresis	c	c	c	cl	p
M.	General paresis	p	p	p	p	p
M.	General paresis	p	p	p	p	p
M.	General paresis	p	p	p	p	p
M.	General paresis	cl	cl	cl	cl	cl
M.	General paresis	p	p	p	p	p
M.	General paresis	cl[1]	cl	cl	cl	p
M.	General paresis	cl	cl	cl	p	p
M.	General paresis	cl	cl	cl	cl	p
M.	General paresis	p	p	p	p	p
M.	General paresis	cl[2]	cl	cl	cl	p
M.	General paresis	p	p	p	p	p
M.	Cerebrospinal syphilis	c	c	c	cl	p

	Gold Negative	1	2	3	4	Control 5
M.	Arteriosclerosis	c	c	c	c	p
M.	Imbecile	p	p	p	p	p
F.	Senile dementia	c	c	c	c	p
F.	Imbecile with syphilis	c	c	c	cl	p
F.	Manic depressive	c	c	c	sl cl	p
F.	Manic depressive	c	c	c	cl	p
M.	Arteriosclerosis	cl	cl	cl	p	p
F.	Organic	c	c	c	p	p
F.	Dementia praecox	c	c	c	cl	p
M.	Dementia praecox	slightly cl	cl	cl	cl	p
M.	Dementia praecox	c	c	c	c	p
M.	Alcoholic	cl	p	p	p	p
M.	Alcoholic	c	c	c	c	p
	Gold tumor type					
M.	Glioma	c	c	cl	sl p	p

c=clear; cl=cloudy; p=precipitate
M=male; F=female

[1] Contaminated
[2] Bloody

Some contaminated and bloody fluids were purposely included in the series in order to determine what difference, if any, this would make. If there was any difference (which is not demonstrable) it was in the direction of rendering a positive reaction negative. Of 21 fluids in which the gold reaction was positive (all from cases of nervous syphilis) 9, or 43 per cent., did not give precipitation in any of the test dilutions (except 1 in a 1:16 dilution). Seven gave "cloudy" solutions and 2 "clear" solutions. In both of the latter the 1:16 dilution was "cloudy." Among 13 cases not due to syphilis in which the gold test was negative, 2 gave positive mastiche tests and 2 others showed precipitation in the 1:16 dilution; in 4 cases all test dilutions were "clear" and in 5 more only the 4th showed "cloudiness" or precipitation. Two cases were "cloudy" in all test dilutions.

One interesting case is the following:

A male tabo-paretic had several times given a weakly positive gold reaction (tabetic type). Fluid removed from the lumbar region at autopsy gave the following gold reaction: 4-5-5-5-5-4-4-2-0-0. Fluid from the base of the brain gave: 5-5-5-5-5-5-4-2-1-0. The mastiche test gave at the end of an hour:

Cord: cl-p-p-p-p
Base: p-p-p-p-p

At the end of 18 hours all tubes in both tests were precipitated.

The significance of "clear" and "cloudy" solutions and of precipitation in the fourth tube is by no means certain. We cannot assume that cloudy solutions and precipitation in one tube are to be regarded as evidence of a positive test, since both changes occur in fluids which otherwise are negative. If we are to regard as positive only those cases in which precipitation occurs in all tubes it is evident that the percentage of positive tests in the group here reported is very low and that the test does not offer a very safe means of determining the presence of syphilis of the nervous system.

Considering the data in this light it seems obvious that the mastiche test is not a valuable addition to our diagnostic armamentarium. It obviously cannot do the work of the gold test and does not seem to add any information which cannot be obtained from other tests.

B. P. Boveri described the following test in *Riv. di Patol. Nerv. e Ment.* p. 280, 1914. To 1 cc. of spinal fluid add slowly down the side, 1 cc. of 1 per cent. potassium permanganate. In a normal fluid the contact zone shows no color change. Having observed the ring the fluids are mixed. If the fluid is pathological the mixture assumes a straw-yellow tint.

Reactions are classified as follows: strong reaction, change in less than 3 minutes; moderate reaction, change in 3 to 4 minutes; weak reaction, change in 5 to 6 minutes. Changes occurring after 6 minutes have no meaning.

The test is said to be best marked in myelitis: to be more sensitive than the Nonné and Noguchi, but not parallel with them, and not parallel with lymphocytosis.

I have not had opportunity to use the test in myelitis cases. My cases are of cerebral rather than cord diseases. This may perhaps explain the aberrant findings here recorded. At any

rate it does not appear that the test is of value in the examination of spinal fluid from the insane.

The ring test showed a reddish zone in only 1 case—in the others nothing. The first appearance of the shaken mixture was "transparent purple" in 3 cases: "opaque purple" in 17. The 3 cases eventually gave a transparent red-straw color (6 minutes : translucent red at the end of 2 minutes). All 3 of these fluids gave a positive Noguchi test and were from cases of paresis. The tests of the other 17 cases remained opaque purple in color throughout the time of observation. Of these, 8 gave a negative Noguchi test, 2 contained blood and 7 gave positive Noguchi test and were from cases of paresis.

From these data it seemed unnecessary to proceed further with the test.

CONCLUSIONS.

From the data presented dealing with the mastiche test on 36 fluids; and the permanganate test on 20 fluids from insane persons, the conclusion is drawn that neither of these tests is of sufficient value to become a part of the routine examination of spinal fluids from the insane.

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Clinical Department.

FRACTURE OF THE CUBOID BONE.

By Wm. Pearce Coues, M.D., Boston.

In the last few years many isolated fractures of the tarsal bones have been brought to light by the increased use of radiographs in the diagnosis of obscure injuries of the foot. Isolated fracture of the cuboid is one of the most uncommon of these unusual fractures and receives scant mention in many modern treatises on fractures.

Present-day experience demands that particular attention should be given all foot injuries caused by indirect violence, where the force seems too slight to produce a fracture. These are often the cases where a radiograph is not taken, and the case treated as one of sprained ankle or sprained foot. Often the clinical symptoms of these cases of isolated fracture are so obscure that the most painstaking clinical examination may not be positive as to fracture, and a radiograph is indispensable for a correct diagnosis. This refers to the fractures from indirect violence without any appreciable displacement, and not to those crushing injuries, where the diagnosis of tarsal fracture is at once apparent clinically, and the only question is how many and just what tarsal bones are fractured.

The shape and anatomic position of the cuboid bone make it extremely difficult to obtain many of the classic signs of fracture, when this bone is injured, and linear cracks and splits are produced without much or any displacement. Point tenderness and the situation of the ecchymosis will prove most valuable signs in the absence of more definite symptoms. The situation and character of the swelling may also serve to show, at least approximately, the site of the possible fracture.

Report of a case:

Walter C., a boy of 11 years, was seen at the surgical clinic of the Boston Dispensary, on April 21st, 1915. He had always been well, and had no previous fractures. On April 20th, he turned his left ankle sharply, while running. He immediately felt much pain in the foot, and was unable to walk afterwards without much disability. Examination showed a well-developed and nourished boy of 11 years. He was unable to put the left foot to the ground without much pain. There was a moderate amount of swelling over the dorsum of the left foot, and slight ecchymosis over the external border of the foot. There was no crepitus obtained, but there was considerable pain on pressure over the base of the 5th metatarsal bone. Posterior to this, in the cuboid region, there was exquisite pain on pressure. Extension of the little toe gave some pain in the foot, but not definite pain in the 5th metatarsal. The x-ray showed a linear crack through the cuboid, without displacement. A cast was applied to just below the knee, and the boy given crutches. May 15th the plaster was removed, and June 5th the boy was discharged well, all tenderness having disappeared, and the foot being used without pain or discomfort.

Le Dentu and Delbet[1] have given a most recent and full account of this fracture, and say that Plagemann found one case of cuboid fracture in 114 fractures of the foot. Immelmann, in studying 20 cuboid fractures found 12 isolated, and 8 associated with fracture of other bones of the tarsus. Tanton[1] remarks that the cuboid, the key to the plantar arch, is practically never fractured in indirect traumatism of the foot. He considers that these extremely uncommon cases of fracture by indirect violence are most often caused by a fall from a height, on the toes, with the foot in hyperextension. Also exceptionally, he thinks they may be caused by antero-posterior compression of the foot, the heel being fixed on the ground, with violent pressure being exerted on the toes. A third possibility is given, also,—forced pronation of the foot, with at the same time abduction of the forefoot.

In the case recorded above there was no history of a blow and, as is often the case, the patient was unable to say just how the ankle "turned." It would seem probable that the third manner of production of the fracture was the one responsible for its occurrence in this

case, a forced pronation, with abduction of the forefoot.

A number of rare anatomic variants may cause confusion in certain cases of cuboid fracture, even with good radiographs as an aid to diagnosis. Among these are the shell-like epiphysis at the base of the 5th metatarsal bone, which sometimes remains without bony union to the base of the metatarsal, and the vesalianum, or bone of Vesalius, at the base of the 5th metatarsal. Occasionally there is a secondary os-calcis, a small bone between the scaphoid and cuboid, which may cause confusion, in question of cuboid fracture.

The possibilities of mistaken diagnosis which come to light in the study of only one rare tarsal fracture makes apparent the necessity of careful radiographic study of these injuries.

REFERENCE.

[1] Le Dentu et Delbet: Nouveau Traité de Fractures. Vol. i, pp. 37-40.

A CASE OF HENOCH'S PURPURA.

BY EDWIN D. GARDNER, M.D., NEW BEDFORD, MASS.

THE following case of Henoch's purpura seems to me unusual and deserving of report:

M. C., 7-year-old school-girl. Mother has had pulmonary tuberculosis, apparently healed. Otherwise family history is negative. Past history: for the last year has complained 5 or 6 times of having colicky pain in the region of the umbilicus. Mother says that child would be out playing and would come home complaining of this pain and no other symptoms. Child would lie down for an hour or two and then would feel all right. Child has had a lot of colds and sore throats. Past history otherwise negative. Present illness: seven days ago child came in complaining of the same pain as described above. No nausea or vomiting. Bowels all right. No fever. This lasted for twenty-four hours. Three days ago complained of a sore throat. Her mother took her temperature and found it was 102° F. Child had headache and backache. In twelve hours the child said her throat was well and temperature was normal. About this time, however, she began to complain of the same abdominal pain as described above only more severe. At this time the family physician was called in, the pain continued and twelve hours later the child began to vomit. She vomited very frequently, ten or twelve times a day, the vomitus consisting of mucus streaked with bright red blood. The pain and vomiting continued until I saw her, when she said the pain was less and she was vomiting less frequently. The bowels were constipated but a good result was obtained by enema. No blood in the stools. No cough. No urinary symptoms. The physician said that since he had seen the child there had been no signs of trouble in the throat and no fever. He also said that the physical signs were the same now as they had been.

Physical examination: Temp. 99.4, pulse 90, respiration, 22. General examination negative, save the abdomen, which was level and tympanitic throughout. No masses or organs made out. No spasm or, if any, very slight and in the right rectus. Moderate tenderness on deep pressure over McBurney's point and in region of umbilicus. No other tenderness. No jaundice. No herniae. No costo-vertebral tenderness. Reflexes normal. Rectal examination was negative, save for slight tenderness high up on right side. Urine clear—acid 1020, alb. 0. Sugar 0. Sediment—rare leucocyte and round cell. Many squamous cells. White count 20,000. Hemoglobin normal. I advised an operation for fear it was appendicitis. The appendix looked normal. In the ileum, about six inches from the ileo-caecal valve, was a soft, smooth mass that gave the feel of putty. It was reddish brown or purplish in color and seemed to be in the lumen of the intestine, as it could be milked along. It was about the size of an olive. It gave the appearance of a blood clot. There was a similar mass about two inches proximal to this. Exploration of the abdomen revealed nothing further. On opening the appendix it was found filled with blood clot. The mucous membrane was normal except that it seemed a little edematous. The patient was troubled for two or three days with bronchitis. No pain or vomiting. On the fourth day temperature rose to 101° F. Abdomen and wound negative and the bronchitis was considered the cause. On the fourth day there was considerable dark blood in the urine and stools. This continued for twenty-four hours and then disappeared. On the fifth day the left ear began to discharge pus and the temperature dropped to normal. The ear continued to discharge for two or three weeks. The child insisted that she had no earache at any time. The mother told me at that time that the child had had considerable trouble with her ears previously. Except for the ear the convalescence was normal, the wound healing by first intention and no return of pain or vomiting. Four weeks after the operation the family physician was called to see some spots on the child's legs. These were typical purpuric spots. She had them scattered over her body, but principally on her legs. They lasted about one week. Since that time, so far as I know, the child has been perfectly well.

I am indebted to Dr. Charles A. Pratt of New Bedford, who referred the case to me.

Society Reports.

NEW ENGLAND SOCIETY OF DERMATOLOGY AND SYPHILIS.

The seventh meeting was held at the Massachusetts General Hospital on February 14, 1917, with the President, Dr. Abner Post, in the chair.

The following cases were presented and discussed:

1. SEVERE BURN.

Presented by DR. THORNDIKE.

The patient was brought before the Society because of the perfect usefulness of her arm despite its extraordinary and extensive deformity. When four years old the right arm was burned and yet, notwithstanding the tremendous contraction, she has absolutely normal motion in all joints. There is no suggestion of keloidal or hypertrophic scarring and the skin is very soft. There is, however, a suggestion of chronic eczema which accounts for

the infiltration of certain areas. The woman has followed the trade of dressmaker and has raised a family.

2. Dermatitis Venenata.

Presented by Dr. Thorndike.

The patient was a blue print dipper and presented a dermatitis due to bichromate of potassium—the third instance observed by the speaker during the present winter. The other two cases were diffuse inflammatory lesions on the hands, while the present outbreak is strikingly limited to superficial ulcerations on the fingers which the man uses in dipping his blue prints.

3. X-ray Plates of Old Syphilis.

Presented by Dr. Thorndike.

During the winter the speaker has observed ten cases of syphilis of the leg bones, all of which have shown profound syphilitic lesions and have given negative laboratory findings.

In the plates shown both bones of the leg appear to be involved. The periosteum is greatly thickened and the "cuticle" layer is also affected. There is no suggestion of tuberculosis or of any traumatic lesions in the patient's history and no history of luetic infection could be elicited, but with the x-ray evidence and with the satisfactory therapeutic reaction obtained thus far, a diagnosis of syphilis should be made. The patient has a heart lesion, is a heavy drinker and also suffers from arteriosclerosis.

4. Pemphigus of Tongue and Cheeks.

Presented by Dr. C. M. Smith.

The process has lasted two years and the lesions have thus far been limited to the mouth. Dr. A. Coolidge, laryngologist, agrees that the lesions are those of pemphigus and that the manner in which fresh outbreaks occur is distinctly in line with the usual course of oral pemphigus. The patient has been observed in two different outbreaks of distinct, vesicular lesions, one attack limited to the cheek and the other to the tongue. The lesions always begin as vesicles, and in the last attack a blood blister, about the size of a lead pencil end, developed and ruptured within a comparatively few hours, leaving a superficially eroded area which was still evident.

The patient has been seen at the Huntington Hospital where the condition was considered to be precancerous and a positive Wassermann was obtained. Since then four Wassermanns at various times and in various places have proved negative. The patient received six injections of salvarsan intravenously a year ago without any benefit at all to the tongue and the only medication that has afforded any relief is one exposure to radium. At no time has any eruption of the skin been noted by patient or by exhibitor.

5. Naevus Vascularis.

Presented by Dr. Oliver.

The patient has been shown at several previous meetings. The entire affected area has been exposed once to the Kromayer lamp and to radium. The improvement is especially noticeable around the eyes where the skin is thin and where she has had fairly short Kromayer treatments. All exposures have been fairly short.

6. Recurrent (?) Roseola of Syphilis.

Presented by Dr. C. M. Smith.

The patient illustrates two points very well—the multiform character of the eruption and the lesions on the tonsil. There is no known source of infection, there is no history of a primary lesion and there is no adenitis. The outbreak appeared two to three weeks ago. Standing at a distance and looking at the back and chest there is sufficient amount of superficial drying and scaling of the skin to suggest some of the ordinary dermatoses. The color of the eruption is very much deeper than one would expect in an eruption of such a short duration.

The chief reason for presenting the patient lies in the rather unusual appearance of scaliness which in certain lights or in certain angles raises the remote possibility of pityriasis rosea. A second reason is the interesting family history. For four months the husband has been working in one town while the patient has been staying in another.

7. Multiple Cancer of Skin.

Presented by Dr. Towle.

The family history is negative. The lesion on the right buttock appeared forty years ago, gradually increasing in size, crusting and ulcerating. Lately it has become slightly sensitive. Twenty-five to thirty years ago a group of papules appeared below the right breast with persistent scaling. Twenty years ago a lesion was excised in the O.P.D., but recurred almost at once. A "water blister" appeared under the left lid twenty-one years ago, was diagnosed as epithelioma and treated with the x-ray, and has not recurred. Fifteen years ago a lesion appeared on the left scapula similar to that on the right breast. Two years ago a lesion appeared over the right clavicle, crusting and spreading, with very tender edges. A few weeks ago a small papule appeared at the crest of the right ilium accompanied by slight itching but no tenderness. On the right buttock there is an oblong lesion, seven by three and a half cm., with strikingly distinct corners, with necrotic, yellowish, slightly moist base of unhealthy granulations, with distinct, slightly raised cicatricial edges and narrow cicatricial margin. This area is very sensitive. Over the middle of the right clavicle is a lesion, six and a half by one cm., which has a smooth, cicatrized base, small sero-purulent crusts and slightly elevated edges. Below the right breast, about mid-way from the nipple to the mid-axillary line, there is an irregularly outlined, oval lesion, seven by three and one half cm., composed of slightly raised erythema with papules superimposed and small purulent and hemorrhagic crusts. This lesion is not sensitive. There is a similar lesion, five by three and a half cm., over the upper left scapula. Papulation is more distinct here and the erythema rather brighter. Just below the crest of the left ilium is a lesion similar to that described above. Near the umbilicus is a small, pea-sized, indurated, erythematous papule.

Biopsies from lesions on the right clavicle, right thorax and right buttock:

Microscopical examination of sections from the right buttock, and right clavicle shows small anastomosing columns of small undifferentiated cells of the basal-cell type in an abundant fibrous stroma. These lines present the typical character of epidermoid carcinoma of the rodent ulcer type. In the sections from the right trunk, although the epithelium does not show any deep invasion, it is, however, very atypical in appearance and must be regarded with suspicion. Epidermoid carcinoma.

Dr. Towle raised the question of treatment.

Dr. Burns replied that this type of epithelioma was suitable for excision and falls well within the class described by Dr. Bowen as precancerous dermatosis in view of its great chronicity and ultimate epithelial degeneration. The woman was originally a patient of Dr. J. C. White and Dr. Bowen. Dr. Burns had observed several patients exhibiting exactly the same appearance, chronicity and evolution.

Dr. Blaisdell inquired as to a possibly factitious element present, as a number of the lesions were squarish and others showed straight boundary lines.

Dr. Towle did not believe so and added that the tendency in the lesions was always toward hypertrophy with eventual breaking down into ulcerations. A factitious element might, however, have been the starting-point of the lesions.

Dr. White did not think that self-mutilation was present in the patient because the lesions were so scattered, were all in inaccessible places, and had lasted so long.

8. Erysipelas (?)

Presented by Dr. Towle.

Seven days ago the patient went to bed with a chill, pain in the right groin, slight nausea, no vomiting, and slept badly. The next day the temperature was 104°F. The patient states that she subsequently felt pain spread down the inside of the thigh. The inguinal glands were swollen. On the third day redness appeared in about the mid-thigh, which was also swollen and hot. Later still the erythema spread to the lower leg. There was no history of injury.

Physical examination is negative except that from the ankle to the knee the skin is bright red, hot, pitting on pressure, and without markedly distinct border. The affected area is tender, particularly over the mid-calf. There are large inguinal glands on the right side. Treatment: ice packs, forced fluids, crude coal tar.

Dr. Towle questioned the propriety of making in this case a diagnosis of erysipelas. The process started in the groin and went downward, whereas in his opinion erysipelas always spreads upwards. The typical sharply defined border was also absent. He was inclined to think that the process was connected more with the lymph than with the cellular tissue and therefore that diagnostically it was not a true erysipelas.

Dr. Oliver stated that he was under the impression that erysipelas could travel in any direction.

Dr. White spoke of examples of the disease in which he had noted progression both up and down a limb—the so-called wandering type.

9. Eczema Seborrhœicum of the Nose on a Syphlitic Soil.

Presented by Dr. Dix.

The patient developed syphilis five years ago and was treated in the Long Island Hospital and has continued treatment more or less since and is now on "mixed" treatment. Recently an eruption broke out on the face, especially about the nose and left temple, but has now faded out a good deal. There seem to be some white, characteristic lesions around the nasal openings, in the hair and also (one or two) on the chin.

Dr. Coues was interested to see this woman as her daughter, a well grown girl, was now a patient in the surgical clinic of the Boston Dispensary with the remains of two circular ulcerations over the tibia which had cleared up in a week's time under Ung. hydrarg.

Dr. Smith rather doubted the specific nature of the present lesion. He was perfectly sure that much of the eruption now present on the scalp and right cheek was not luetic.

10. Pityriasis Rosea (?)

Presented by Dr. Towle.

Three months ago the patient complained of sore teeth, sore throat and headache. A rash appeared on the abdomen and later covered the entire body. The patient consulted her physician and was given four injections of salvarsan at weekly intervals. The rash began to fade after the second injection. The patient showed about a dozen discrete maculopapular lesions, pinhead to dime-sized, in places somewhat annular, scaling particularly about the periphery, yellowish gray in the center. The scales were not loosened from the center.

The question arose as to whether the eruption was a seborrhoea, pityriasis rosea, or was due to salvarsan. Dr. Towle was inclined to the seborrhoeal theory.

11. Benign Cystic Epithelioma.

Presented by Dr. Burns.

The condition began in childhood, and the lesions have steadily and gradually grown in number and in size until today there are on the forehead, the left temple, the inter-eyebrow area, on the sides of the nose, and over the left malar region, single and grouped lesions, the size of a small pinhead to that of a good-sized pea. It seems as though one could follow the lesions from what would surely be called ordinarily a milium to the finished product, which is a glistening, whitish, smooth, dome-shaped, papulo-nodule. There is very little redness about them and there is no tendency toward angiomatous formation on their surface, so that a diagnosis of adenoma sebaceum seems doubtful. These lesions seem rather greasy and their greatest density is in each naso-labial fold. The man presents a striking picture. Biopsy made and the histologic diagnosis is benign cystic epithelioma. The lesions were first treated with radium but better results have since been obtained with fulguration.

12. LYMPHANGIOMA TUBEROSUM MULTIPLEX.

Presented by DR. BURNS.

The disease has been present for four years on the feet and one and a half years on the hands. The lesions consist of papules, pea-sized to half an inch in diameter, bluish-red in color, arranged in annular form. There is neither stippling nor striation and the lesions are dome-shaped rather than flat-topped. Those on the feet, especially on the bottom, have fairly heavy scales from friction (?) and are more or less confluent. There has been no remission of lesions since the start and the patient has had no symptoms from them. It will be noted that the distribution of the lesions is distinctly unusual. The diagnosis has been confirmed by the microscope. As to treatment, Dr. Burns stated that incision followed by attempts at destruction with caustics or even fire does not always suffice to eradicate the process, but in a number of cases of lymphangioma radium has been quite successful.

13. SYPHILIS.

Presented by DR. SMITH.

In March, 1912, a penile sore was observed but was apparently not followed by skin or throat trouble or hair manifestations. This chancre appeared four days after coitus and there was no previous acknowledged exposure. In December, 1915, thickening of shins developed, accompanied by a scaly, papular eruption over the arms and legs, and interstitial keratitis was present. The Wassermann was negative.

On Feb. 8, 1916, the Wassermann was weakly positive. On Aug. 19, 1916, the lesions on the legs were typically rupial. From August to December four 0.4 doses of diarsenol were administered.

At present the man's physical examination is negative except for his skin condition and impaired resonance in the right lung. On the trunk and extremities there are numerous oyster-shell-like lesions, about twenty on each arm, from two to four cm. in diameter and there are numerous smaller ones on the legs, varying from two to twenty millimeters in diameter and from five to ten millimeters in height.

14. LUPUS ERYTHEMATOSUS.

Presented by DR. OLIVER.

The patient shows numerous pea to dollar-sized areas of lupus erythematosus scattered over the greater part of his face. He has had much treatment, both public and private, including many freezings with CO_2 snow, none of which, although some were severe, have relieved the itching and irritation of the lesions.

The patient states that after the first treatment with the Kromayer lamp (two millimeters—blue quartz screen), lasting half an hour, he got complete relief from itching and irritation and since then many areas have been treated and the patient is very enthusiastic over the results of these treatments. The appearance of the lesion treated three months ago is very good; there is no scaling and the color is almost normal. On the patches more recently treated there is still some erythema but no scaling. A patch on the right cheek, treated four days ago, shows a flat, drying bulla. A lesion treated yesterday shows a flat, unruptured bulla. The ears have been treated with white light, at a distance of two inches, applied for about six minutes at a time and here also there is considerable improvement with lessening of scaling. The question is, is the improvement so far obtained to be permanent? Immediate results have been remarkably good.

15. NAEVUS VASCULARIS.

Presented by DR. OLIVER.

The child presents a naevus of the large cavernous type—great masses of vessels covering a large part of the right side of the forehead. When first seen she was sixteen months old and up to that time the right eye had never been opened, nor could it be opened, and her parents thought that there was no eye underneath. Two areas were frozen with CO_2 snow, twenty-five to thirty-five seconds each. Two months after this treatment the eye opened, and at the time of admission to the hospital (Feb. 7, 1917) the child showed an apparently normal eye with the lids separated half an inch and the swelling markedly decreased. At the present time the eye is closed, due to marked oedema from a freeze three days ago.

16. NAEVUS PIGMENTOSUS.

Presented by DR. OLIVER.

The condition has existed since birth and, according to the patient, is increasing. She is now sixteen years old and shows innumerable, pin-head sized, hemorrhagic points on both lips, at the corners of the mouth, on the muco-cutaneous membrane and on the mucous membrane as well. Occasionally the lesions are confluent, the majority, however, are distinct. The general effect on the lips is that of a deep bluish tint superimposed on the normal red.

It is rather interesting to note that a few days previous to the birth of the patient her mother was sitting opposite a woman who was eating blueberries and asked for some, but was refused, and this refusal made quite a deep impression on the mother.

CHARLES J. WHITE, *Secretary.*

NEW ENGLAND SOCIETY OF DERMATOLOGY AND SYPHILIS.

The eighth meeting of the Society was held at the Boston City Hospital on Tuesday, April 17th, 1917, with the President, Dr. Abner Post, in the chair.

The following cases were presented and discussed:

1. GENERAL CUTANEOUS ACTINOMYCOSIS.

Presented by DR. BOARDMAN.

One month ago the man noticed a "sore" under the angle of the jaw. Two weeks ago a similar lesion developed on one finger, and the attending surgeon told the man he had paronychia. Today there are many large cutaneous nodules (up to the size of a hen's egg) noted on the trunk, arms, legs and scrotum and new lesions are appearing from day to day. No nodule has broken down, but incision has revealed yellow granules which microscopically have

proved to be actinomycotic. Thorough examination with x-rays has failed to disclose a single internal focus of the disease.

The patient has recently been working in a diet kitchen, but up to 4½ years ago was a Greek agriculturist.

Dr. Boardman stated that a purely cutaneous infection of actinomycosis was almost unique.

2. Hemangioma of Palm.

Presented by Dr. Thorndike.

When first observed there was a purple-red, pea-sized, dome-shaped, sessile growth in the middle of the palm of five weeks' duration. The nodule was treated with radium and the lesion shriveled up and the crust fell off leaving practically no scar.

Dr. White asked Dr. Thorndike if he had considered the possibility of granuloma pyogenicum. Dr. Thorndike said "No," because of the bloody nature and profuse hemorrhage of the lesion.

3. Dermatitis Simulating Paget's Disease.

Presented by Dr. Thorndike.

The patient was forty-five years old, single, and still menstruating. When first seen the pathologic area had been present for three weeks and was limited to the left nipple and appeared as a unilateral, superficial, well-defined ulceration with crusts and a slightly indurated base; no itching, no surrounding eczematous condition. The patient has been under treatment for ten days and the ulceration has cleared up remarkably under Lassar's paste so that one must consider the condition merely as an excoriation with subsequent pyogenic infection.

4. Ringworm of the Scalp.

Presented by Dr. Oliver.

The patient, a twelve-year-old girl, developed ringworm of the scalp about five months previously. She was treated for a while with ointments and later the whole scalp was x-rayed, with resulting complete epilation. The hair has now grown again in a rather curious manner, for the affected areas have very much thicker hair than the other portions of the scalp.

Dr. Oliver thought that the increased blood supply due to the severity of the ringworm may have produced the localized increased growth of hair. Dr. Chace suggested that the x-ray did not penetrate so deeply in the affected areas on account of the scales and crusting. Dr. White felt that the increased growth of hair was possibly due to the application of external stimulating ointments to the affected areas before and after the x-ray treatment.

5. Ringworm.

Presented by Dr. Boardman.

The patient has been in this country three years and the process has existed two years, beginning on the right hand and later involving both feet. There is no history of contact with animals. Scrapings from the finger nails revealed ringworm spores and cultures have been grown. This type of ringworm is not so well known to the general practitioner as it should be and is usually diagnosticated as eczema. A cure under such conditions is well nigh impossible. Treatment in the present case has consisted of maceration followed by scraping and the subsequent application of an ointment containing 20% ammoniated mercury. A normal nail is now appearing on one finger.

6. Dermatitis Herpetiformis.

Presented by Dr. Oliver.

The disease has lasted six months and is now irregularly distributed over the face, especially the lower part, the clavicular regions, the neck, the arms, and somewhat on the lower extremities. The eruption is purely vesicular in type, usually grouped, and the areas vary in size from two to three vesicles a quarter of a centimeter in diameter to groups of vesicles two inches in diameter. Almost all areas have more or less surrounding erythema and many of them are confluent and show a distinct gyrate and annular tendency. The process does not itch, but a severe burning is present. Since the beginning there has been temporary improvement but never entire remission of the outbreak. There is no history of psychic shock in this woman of twenty-seven.

7. Ichthyosis.

Presented by Dr. Boardman.

A typical ichthyosis dating back to early childhood. When the patient came to the hospital there were marked eczematous changes, especially on the legs. Following treatment with salicylic acid and olive oil and thyroid extract there has been marked improvement. The pulse, however, was rapid at first.

Dr. White asked about the propriety of giving thyroid extract to a child with rapid pulse. Dr. Boardman replied that medical men were not opposed to giving the extract under such circumstances. Dr. Oliver said that he believed that the results one got from thyroid medication were due to stimulation of glands and that there was in these cases no natural deficiency of thyroid secretion. He expressed himself as very sceptical about any marked change in these cases following the use of thyroid. He considered that the pulse should be watched carefully during thyroid therapy.

8. Pemphigus of the Mouth.

Presented by Dr. Post.

The duration of the disease is sixteen months and the patient has never been free from lesions during this period. Sometimes there have been five or six bullae present but for much of the time only one or two. The lesions appear as blisters filled with clear or slightly necrotic fluid, last one week and break, leaving a red, very tender base. The mouth is particularly sensitive to acids. The teeth have been extracted on account of heart trouble rather than with a view to curing the mouth condition. The process is gradually growing worse and today there are lesions in the mouth, on the tongue, and on the inside of the cheeks.

9. White Negro.

Presented by Dr. Thorndike.

A very remarkable case. Ten years ago this totally black negro began to lose the pigment from his black skin and was first seen at the hospital two

years later. He now shows complete loss of pigment. The only history given was that twenty-four hours after a cat scratch on the chest the pigment began to disappear and from that point has spread over the entire body. Dr. Thorndike, in the early days, tried to cause a loss of pigment by pricking an unaffected portion of the skin with a needle, but no depigmentation could be observed in consequence. Today, this hitherto black man stands free from pigment. Hair, eyes, skin and nails, all have shared in this extraordinary example of acquired albinism.

10. Syphilitic Periostitis.

Presented by Dr. Thorndike.

Seven months ago the patient began to have exceedingly painful osteocopic pains. Radiographs showed a typical periostitis with a certain amount of sclerosis. The Wassermann test was triple positive. The man has received mercury and salvarsan and the pains in the arms have improved, but those in the legs have not improved, and the patient is acquiring a gradual, but steady, interference with motion in the elbow joint, and now cannot straighten out his arms. Since the patient has been under treatment, there has been an increase of four or five per cent. in loss of extension. The tibiae also show periostitis.

Dr. Post said that he was very much interested in the case on account of its obstinacy, but he believed that treatment had not been exhausted until iodides had been tried. This inability to straighten the arms was a subject about which the older syphilologists talked more or less. It was supposed to be due, sometimes, to difficulty with the bones and sometimes to the effect on the muscles of the upper arm so that they lost some of their sensibility.

11. Lupus Vulgaris.

Presented by Dr. Oliver.

The patient, an Armenian man, had had the disease for seventeen years and had endured every imaginable treatment. Finally the disease had quieted down, but as the nose was almost wholly gone, a plastic operation was performed. This was a year ago, and now the patient returned with a recrudescence of the disease in the flap. What was to be done?

Dr. Oliver said that he would try the Kromayer lamp on some of the areas involved.

12. Syphilis and Jaundice.

Presented by Dr. Boardman.

Primary lesion, secondary rash, sore throat, and general glandular enlargement were present. The woman was given mercury for a week and then salvarsan. After the last injection three weeks ago, jaundice began to appear and the patient was treated at home for a week or two with general dietetic measures and mercury, and "606" was omitted. She was then admitted to the hospital where the liver was found to be enlarged with a pretty intense jaundice. The patient now feels much better. Mercury was again administered followed by an injection of "606" the day before yesterday. Jaundice is no worse, although it has not improved yet, but the liver is growing smaller. A previous deafness has grown worse during the present conditions.

13. Malignant Erysipelas.

Presented by Dr. Thorndike.

A case of erysipelas in an alcoholic woman which had been followed by necrosis and discharge of a large part of the pudenda and perineum. The affected area had been treated with chlorinated soda and allowed to slough off until granulation began to appear. The patient was then referred to the surgeon who had done a most successful plastic operation. Curiously enough the woman ran a normal temperature throughout the whole course of the disease.

14. Marked Venous Enlargement.

Presented by Dr. Boardman.

The man presented very great venous enlargement of the legs and trunk without obvious cause.

15. Precocious Syphilis.

Presented by Dr. Boardman.

The woman showed evidences of secondary syphilis, with general but proportionately very slight glandular enlargement. No primary lesion could be found. There were mucous patches in the throat, and very marked, almost rupial lesions in the scalp.

16. Lichen Planus.

Presented by Dr. Oliver.

The man presented a perfect embroidery of circinate lesions made up of fine, perfectly distinct papules, none of which averaged larger than the size of a pinhead, on the corona glandis, foreskin, inside the cheeks and on the palms.

17. Epithelioma of the Tongue.

Presented by Dr. Thorndike.

The patient was a woman. The growth started in the mouth near the frenum. There had been two operations, the last Nov. 8, 1916. Since then the growth has returned and now the whole tongue is involved.

Charles J. White, *Secretary.*

Book Reviews.

The Medical Clinics of Chicago, January, 1917. Philadelphia and London: W. B. Saunders Company.

In this number eleven clinicians take up a wide variety of topics. Of particular interest is an excellent summary of barium diagnosis by Dr. Case. A case of true amebic dysentery developing in Chicago is also briefly recorded. The other discussions conform to the general plan of previous numbers.

An Index of Differential Diagnosis. Edited by HERBERT FRENCH, M.A., M.D., OXON., F.R.C.P. Lond. Second Edition. New York: Wm. Wood & Company. 1917.

THIS second edition of a well-known work on the differential diagnosis of main symptoms by various writers has been thoroughly revised and has several new articles added. The elaborate index has been made even more complete and the illustrations nearly double in number. There are now thirty-seven colored plates and over three hundred text cuts. The work is a useful reference manual of symptomatology and should continue its popularity with the medical profession. The symptoms are arranged alphabetically, from Accentuation of Heart Sounds to Yellow Vision. The contributors are twenty-three distinguished members of the British profession.

Diseases of the Stomach, Instestines and Pancreas. By ROBERT COLEMAN KEMP, M.D. Third edition, revised, with 438 illustrations. Philadelphia and London: W. B. Saunders Company. 1917.

THE first edition of this book was reviewed in the issue of the JOURNAL for September 1, 1910 (Vol. clxiii, p. 370). This third edition is enlarged by a new special section on the radiography of gastric ulcer, cancer, duodenal ulcer and gall-bladder disease; by a chapter on Lane's kink, Jackson's membrane, duodenal dilatation, and incompetency of the ileocecal valve; and by a section on sub-infection and protein absorption in the part on chronic intestinal putrefaction. Particular attention is devoted to abdominal ptosis and its mechanical treatment, though it seems that this aspect of the subject is made unnecessarily complex. Its importance, however, is not exaggerated. Other important additions to this volume are on hypochlorhydria and the treatment of obesity. The work should retain the position of usefulness prognosticated for it in our first review and successfully maintained by preceding editions.

Diseases of the Stomach. A Textbook for Students and Practitioners. By MAX EINHORN, M.D., Professor of Medicine at the New York Post Graduate School and Visiting Physician at the German Hospital. Sixth revised and enlarged edition. New York: Wm. Wood & Company. 1917.

THE first edition of this standard textbook for practitioners and students was favorably reviewed in the issue of the JOURNAL for May 27, 1897 (Vol. cxxxvi, p. 524); the fourth edition, in the issue of January 3, 1907 (Vol. clvi, p. 19); and the fifth, in the issue of May 2, 1912 (Vol. clxvi, p. 672). This sixth edition, intended to keep the work abreast of the progress of gastric pathology, continues to fulfill the useful promise of its predecessors. The number of illustrations has been increased from 112 to 128. Since the publication of the original edition, the knowledge of stomach diseases has become much more generalized among the medical profession. The author's work represents his life experience in the subject, which has contributed in no small degree to its development as a specialty of scientific medicine.

The Basle Anatomical Nomenclature. By E. B. JAMIESON, M.D., M.B., Ch.B. Edin. New York: Macmillan Company. 1916.

THIS monograph is a convenient compilation, in parallel columns, of an alphabetical list of terms showing the old anatomical terminology, the Basle anatomical nomenclature and the suggested English equivalent. In his introduction, the author describes the adoption of the B.N.A. terminology in 1895 and its subsequent gradual spread through the scientific world. Hitherto the chief obstacle to the universal employment of the B.N.A. in this country has been the lack of a satisfactory and accessible list of English equivalents and the unwillingness or inability of most American medical students to employ the Latin terminology correctly. This work by a Scottish anatomist supplies in convenient and accessible form this need of a standard English nomenclature of anatomy. It fills a very definite want in the teaching of this subject, and should prove a distinct aid in the ultimate establishment of a rational anatomic nomenclature.

A Compend of Human Physiology. By ALBERT P. BRUBAKER, A.M., M.D. Philadelphia: P. Blakiston's Son & Co. 1917.

THIS compend is intended for use by medical students and is probably a very fair representative of this fast disappearing type of medical literature. That a course in physiology should be so constituted as to be aided by the material here presented is fortunately increasingly inconceivable. As a summary of current physiology the book maintains the old anatomical viewpoint, a rather large amount of space being devoted to presentations of structure prior to every discussion of function. It can therefore be of assistance in only very elementary types of teaching or preparation. The fact that it is impossible to present physico-chemical material in canned form without rendering it inordinately difficult, spells the certain elimination of the compend in physiology, and this example, with its conspicuous absence of such material, can only go the eventual way of other members of the same class.

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ERNEST GREGORY, *Manager,*

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THE CAMP IDEA IN TUBERCULOSIS.

THE value of the open-air school, both in the winter and in the summer months, for either the poorly developed or the tubercular child, has been amply justified by the results reported in Boston and in Chicago, and wherever else it was tried. Similar results have been accomplished, in the reclamation of the child exposed to tuberculosis, in the preventoria maintained in many places. Not only have these children become well and strong, but their scholastic attainments have approached well within the standards of normal children. Whether the open-air treatment is administered to children in the open-air schools or in the preventoria, or to adults in day camps, it is the open-air treatment that holds the greatest hope for recovery. For the well-marked active case, whether in children or in adults, there is no other method of treatment but the outdoor method. During the active stages neither the child nor the adult can afford to engage in educative pursuits or in any occupation. But for the arrested case or for the child or adult that is on the mend, it is neither right nor desirable to withhold education or occupation. For the adult, suitable work prevents his ultimate pauperization and prevents him from being a burden to himself, his dependents, or to society. Otherwise his reclamation would be a mistake rather than a benefit. For the child, the absence of education during the formative period of his life would be to throw it hopelessly in the mentally backward class. It is to these classes that the day-camp idea is of the greatest benefit.

But unless the day camp is supplemented by the night camp, the value of this method of treatment must fail, for the patients must return to their homes at night, where conditions are the same as those which undoubtedly caused the original infection. These patients can again become sources of infection, and of greater degree than even much worse contact during the day. Moreover, the night camp would afford a place for the tubercular case that is allowed whole-day employment. None of the artificial open-air sleeping contrivances for use in the congested homes can quite equal the value of sleep entirely in the open air, under the same conditions as obtain in the day camps. This method of treatment for the arrested cases would prevent a great many of them from becoming reactivated after a short period of occupation, and would undoubtedly broaden the scope of occupations allowed these individuals. The night camp must be a graduation from the day camp, at least where both cannot be given. The ideal substitutes for the sanatorium climatic treatment, where this cannot be afforded, are the day and the night camps. Besides hurrying recovery and reducing the chances of secondary infections, the camp idea would afford more room for the well members of a tubercular family, in homes where room is usually at a premium.

THE ECONOMIC VALUES OF LIFE AND HEALTH.

NOT until the nation is made to face the enormous expense of maintaining the sick or of replacing the loss during warfare, does the money

value of the individual and the loss entailed by his illness or death strike the public forcibly. Yet the money loss from sickness and death in civil life parallels that during war. Unless the figures are actually viewed and analyzed no adequate conception can be had. When once these figures are borne in mind, there can be no cost of study, research or of actual preventive measures that can quite equal the cost in money of disease or death from preventable disease. Moreover, besides the mere saving of life or the prevention of disease, measures looking toward prevention prolong the span of life many years. It is estimated that modern preventive measures now awaiting public approval, in the way of adequate funds, can increase the span of life more than fifteen years. Indeed, the gradual scientific developments since the Dark Ages have raised the span of life from an average of twelve years to nearly fifty years at the present time. Even now the deaths from preventable causes in the United States are estimated at much over half a million. From 20 to 50% of the children under one year die before the expiration of that period. While such diseases as typhoid and tuberculosis have been much reduced by modern preventive measures, the rise in the incidence of degenerative diseases, such as are justly attributed to alcohol, syphilis, and generally high-pressure life and overspeeding, has been very abrupt of late; and what has been gained in the reduction of acute infectious diseases and other disease conditions is much overbalanced by degenerative diseases. In the former it is the general public that is responsible for the rise or fall, according as they withhold or furnish coöperation in preventive measures, but in the latter the fault lies in the individual, who will not become educated to the proper mode of living.

Professor Irving Fisher of Yale University has aroused considerable interest in this general topic by his computation of the money values of life and health. He estimates the value of a new-born child at nearly $100. At twenty years, this infant's value is about $4000. The money loss from each postponable death is about $1700, and about 40% of all the deaths are postponable. The total money loss from preventable or postponable deaths is much over a billion dollars yearly. If the annual cost of illness is included, the loss annually is much over two billion dollars. The money value of the people of this nation—the human asset—is estimated at more than twice the value of the physical wealth. Nevertheless, in the conservation of the latter asset an infinitely larger proportion of the public money is expended than is so grudgingly bestowed upon the conservation of life and health.

GRADUATE WORK IN FRANCE.

A MOVEMENT is on foot to restore to its true status French science and learning in America. For a generation past Germany has been the goal of the graduate student in search of further attainment in his chosen field and a degree in recognition of his study. That France has been equipped with equal educational facilities has not been taken into account, and few students have patronized her universities. The probable reason is found in the refusal of French Universities to open the majority of their courses to Americans and to confer on American students the desired degree. Within the few years past a committee was formed of Paris professors, instigated by a small band of American students, to endeavor to prevail upon the French Ministry of Education to remove these prohibitive regulations. They were successful to the extent that in all of the faculties of Paris, and possibly of all the fifteen other French universities, a French university degree is attainable by any qualified American student. His American degree (if from an institution of repute) will be accepted as equivalent to the corresponding French degree, qualifying him to become a candidate for the next higher degree.

It is now the endeavor of a society calling itself The Society for American Fellowships in French Universities, to bring to general attention the excellence of French institutions and their extensive facilities, and to foster in American students the desire to find in them the opportunity for further study, which they have been led to believe existed only in German universities. To this end, ten or more graduate fellowships are to be established for American students in French Universities, to be awarded competitively every year for ten years, beginning October, 1917; each fellowship to hold for two years, if desired. The Society has also published a book entitled "Science and Learning in France," aimed to set forth the status of French learning in the world of knowledge.

Following is a list of the Trustees of the Society as thus far formed:

New York, Charles A. Coffin (chairman of the General Electric Company), acting chairman; Henry S. Pritchett (president of the Carnegie Foundation for Teachers); Alexander C. Humphreys (president of the Stevens Institute of Technology); Dwight W. Morrow (of the firm of J. P. Morgan and Company); Thomas Thacher (president of the University Club of New York); Robert Bacon (former ambassador to France). Boston, Major Henry L. Higginson (of Lee, Higginson and Company, Bankers; member of the Harvard Corporation). Chicago, Charles L. Hutchinson (vice-president of the Corn Exchange National Bank; president of the Art Institute of Chicago); John V. Farwell (former president of the Commercial Club; member of the Yale Corporation). Cleveland, Myron T. Herrick (former ambassador to France). New Orleans, Charles P. Fenner (of the New Orleans Bar; Dean of the College of Law of Tulane University). St. Louis, Robert S. Brookings (president of the Board of Trustees of Washington University). St. Paul-Minneapolis, Charles W. Ames (president of the West Publishing Company).

MEDICAL NOTES.

MORTALITY RATES IN JAPAN.—The Department of Health of Tokyo, Japan, publishes the following statistics regarding its death rates for the year 1915. During that period there were 41,582 deaths, of which 21,403 were men and 20,159 were women. Tuberculosis caused the largest number of deaths—6635; diarrhea, 4206; pneumonia, 4206; Bright's and other forms of kidney disease, 2274; brain diseases, 2103; meningitis, 2714; and cancer, 1431.

NEW YORK HEALTH RATES.—According to the annual report of the Department of Health of New York City, the year 1916 was the most healthful in its history, for, despite the infantile paralysis epidemic, the death rate was 13.89 per thousand inhabitants. Child mortality was reduced to 93 infants in every thousand, as compared with 125 in 1910. There was a decrease in births for the year of 3592, due, it is believed, to a cessation of immigration and the low marriage rate of the previous year. The marriage rate of 1916, however, increased by about 4000. There were 4235 deaths due to violence, many of them among children, and most of these preventable.

WAR NOTES.

PHYSICIANS FOR FRENCH CHILDREN.—A commission of pediatricians, under the leadership of Dr. J. P. Sedgwick of the University of Minnesota, will go to France to organize treatment of French children who are suffering from shell-shock and diseases resulting from lack of care during the war. The commission grew out of a conference of the American Pediatric Association with Herbert C. Hoover and physicians who worked with Mr. Hoover in Belgium.

WAR HONOR FOR BOSTON PHYSICIAN.—President Poincaré of France has conferred upon Dr. Ralph R. Fitch of Boston the distinction of being made knight of the Legion of Honor. This is in recognition of his work in the Franco-American Hospital at St. Valery en Caux, France. Dr. Fitch, who is a graduate of the Boston Latin School, received his degree of M.D. from the Harvard Medical School in 1903. After serving in the Massachusetts General Hospital and the Children's Hospital, Dr. Fitch associated himself with Dr. Weigel of Rochester, N. Y., well known for his work with x-ray. In December, 1914, Dr. Fitch offered his services to the Allies and was sent to a hospital at Yvetot, France. In August, 1915, he established a hospital at St. Valery en Caux, and became its head physician.

AMOUNT OF RED CROSS WAR FUND.—It is reported that on July 16 the amount of the Red Cross War Fund had totalled $118,021,370. Of this amount, Massachusetts contributed $5,613,268; Maine, $604,898; New Hampshire, $375,341; Vermont, $162,000; Rhode Island, $896,923; and Connecticut, $2,633,622.

RECRUITING OF MOTOR UNIT FOR FRANCE.—The Society of Automotive Engineers has planned to recruit a unit consisting of twenty truck drivers and ten mechanics with twenty helpers, for Red Cross service in France. All expenses will be provided, but recruits will be expected to serve without pay. The trucks will be used for transporting supplies from seaports to the devastated districts of France.

AMERICAN AMBULANCE IN GOVERNMENT SERVICE.—The American Ambulance at Neuilly has been formally turned over to the United States Government to be used as a Red Cross Hospital. The ambulance committee will be replaced by an officer of the American Army, and the staff of surgeons and nurses will continue as before, if they choose to offer their services.

ARRIVAL OF MASSACHUSETTS GENERAL HOSPITAL UNIT.—It is reported that the United States Army base hospital No. 6, organized at the Massachusetts General Hospital, sailed secretly from Boston on July 9, and arrived safely on July 21 at a port in England.

WAR RELIEF FUNDS.—On July 21 the totals of the principal New England war relief funds reached the following amounts:

Secours National Fund	$321,465.22
French Wounded Fund	241,636.71
Armenian Fund	203,722.41
Permanent Blind Fund	119,503.50
Surgical Dressings Fund	111,366.00
Italian Fund	42,959.72

BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending July 14, 1917, the number of deaths reported was 183, against 199 last year, with a rate of 12.36, against 13.65 last year. There were 35 deaths under one year of age, against 31 last year.

The number of cases of principal reportable diseases were: diphtheria, 53; scarlet fever, 23; measles, 93; whooping cough, 15; typhoid fever, 3; tuberculosis, 127.

Included in the above were the following cases of non-residents: diphtheria, 3; scarlet fever, 5; whooping cough, 1; typhoid fever, 1; tuberculosis, 4.

Total deaths from these diseases were: diphtheria, 1; measles, 3; typhoid fever, 1; tuberculosis, 24.

Included in the above were the following non-residents: diphtheria, 1; typhoid fever, 1; tuberculosis, 2.

PRIVATE WARD OF THE MASSACHUSETTS GENERAL HOSPITAL.—The new and luxurious private ward at the Massachusetts General Hospital is in operation and is meeting with deserved approbation.

It is a building of eight stories and of fireproof construction throughout. It has accommodations for 102 patients. It is equipped with three general surgical operating rooms, an operating room especially designed for nose and throat cases, a large plaster room for orthopedic cases, and two clinical pathological laboratories. There are large balconies on the level of each floor and also a roof garden, to which patients' beds may be wheeled. Patients' rooms are connected with the electrocardiograph. There is a complete x-ray department in the building, which is under the direction of Dr. George W. Holmes.

The Trustees have decided to offer the use of this ward to a limited number of physicians not on the staff of the Hospital. They will be glad to extend the use of the ward for the treatment of cases of the same general character as the Massachusetts General Hospital has always accepted.

BOSTON BABY HYGIENE ASSOCIATION.—At the July meeting of the Baby Hygiene Association the director submitted a report showing that during the past six months 1744 new babies were treated, which is an increase of 368, or 26.7%, for a corresponding period last year. With the usual increase in August and September, a weekly registration of 2500 babies may be expected before the end of the year.

HEALTH REPORT OF WORCESTER, MASS.—The recently issued annual report of the Worcester (Mass.) Board of Health states that its death rate for the year ended December 31, 1916, was 16.80 per thousand. Excluding deaths at both State Hospitals, it is 14.75, and excluding non-residents it is 13.80. The birth rate per thousand was 28.80.

POLIOMYELITIS IN HAVERHILL AND GROVELAND.—Five cases of poliomyelitis in Haverhill, Mass., and one in Groveland, Mass., make a total of sixteen cases of the disease reported in Massachusetts in June, 1917.

NEW ENGLAND NOTES.

MAINE HEALTH COMMISSIONER.—Upon the organization of the health department of the State of Maine, based on the administration of Massachusetts and New York Departments of Health, Governor Milliken appointed Dr. Leverett D. Bristol of Boston as Health Commissioner. Dr. Bristol was born in Chicago, Ill., on June 2, 1880. He graduated from Wesleyan University in 1903 with the degree of S.B., and from Johns Hopkins University in 1907 with the degree of M.D. He subsequently became engaged in public health work in New York, Minnesota and North Dakota. About a year ago he entered the Harvard Medical School enrolling for the degree of Doctor of Public Health. During that time he has been doing research work for both the Massachusetts State Health Department and the Harvard Infantile Paralysis Commission. Dr. Bristol will take charge of reorganizing the health work of Maine as soon as his appointment is confirmed by the executive council.

The Massachusetts Medical Society.

NOTES FROM THE DISTRICT MEDICAL SOCIETIES.

HAMPSHIRE.—The regular meeting was held at Boyden's Restaurant, Northampton, July 11, 1917. Papers were read by Dr. E. E. Thomas on "Acidosis in Children"; and by Dr. O. W. Cobb of Easthampton on "Health in the Public Schools." The matter of the medical care of enlisted men's dependents, as advocated by the State Board of Health, was brought up by Dr. Miner of Ware, and referred to the committee on military affairs. Seven Fellows have already received commissions in the Medical Reserve Corps of the Army, and five others have made application.

Lt. J. D. Collins, Lt. W. J. Collins, and Lt.

J. F. Bowen are on active duty at Fort Benjamin Harrison, Indiana; Lt. H. B. Perry is stationed at Boston with the Department of the Northeast. Capt. E. C. Green, Lt. E. E. Thomas, and Lt. E. H. Hughes are awaiting orders.

E. E. THOMAS, M.D.,
District Correspondent.

Obituaries.

EMIL von BEHRING.

ON the day following the birth of Paul Ehrlich was born another illustrious German, Emil von Behring, and it is interesting to note that the present year ends both their careers. Dr. Behring was born at Hansdorf in West Prussia, on March 15, 1854. After qualifying in medicine at Berlin, he entered the Army Medical Corps, and in 1888 was made lecturer at the Army Medical College in Berlin. When he was thirty-five years of age he became assistant at Koch's Institute for Infectious Diseases and for the next five years he accomplished those achievements of research in immunity which have made his name known the world over. Of his work during this time the *Lancet* says:

"Working alone on diphtheria toxin and in association with Kitasato on tetanus toxin, 'the possibility of successfully treating cases of acute infectious disease' became the theme of a research published in the *Deut. med. Wochens.* in December, 1890, entitled 'Über das Zustandekommen der Diphtherie-Immunität und der Tetanus-Immunität bei Tieren.'' Clinical experience, accumulated largely by Heubner, confirmed these experimental results, and at an address on the Aims and Achievements of Serum-therapy at the Naturalists' Congress in Lübeck (1895) Behring was justified in saying: 'I have no fear that the thought which forms the basis of serum-therapy will ever disappear out of medicine.' He estimated the probable saving of 75 per cent. of the mortality from diphtheria in Germany, an annual credit of 45,000 human lives. For this work Behring shared with Roux the 25,000-fr. prize of the Paris Academy of Medicine and the 50,000-fr. prize of the Institute of France. In 1901 he received the Nobel prize for Medicine, and delivered an address in Stockholm on Serum-therapy, while his progress in the receipt of official recognition at home reached the highest level of Excellency in 1903."

In 1895, when he was forty-one years of age, he was appointed director of the Institute of Hygiene of Marburg and from this time on he achieved nothing further corresponding to the five years of successful scientific work at Berlin. He suffered from ill-health and from periods of depression. Becoming financially interested in the manufacture of antitoxic serum by the Farbwerke Höchst, he was given large and admirably equipped laboratories in which to work, where he conducted researches involving 7,000,000 ounces of tubercle cultures. His results with bovo-vaccine excited keen interest for a time, but do not appear to have survived the test of time and prolonged experience. Whatever the practical outcome of his experiments, he has had a profound influence on contemporary thought in regarding tuberculosis as a lifelong affection. He died from an attack of pneumonia on March 31, 1917.

WILHELM WINTERNITZ.

WILHELM WINTERNITZ, emeritus professor of medicine in the University of Vienna and called "the father of scientific hydrotherapy," died on February 22nd at the age of 82 years. The *Lancet*, in its obituary, says of him:

"From the time of his inaugural dissertation (1865) on 'The Rational Basis of Certain Hydrotherapeutic Measures' to the appearance, a few days before his death, of 'The Water-Cure and Natural Immunity,' Winternitz was constantly occupied in research on physical treatment. Many of his studies of the action of thermo-mechanical influences on the circulation and metabolism are now classical, as well as the long and bitter feud between himself and Liebermeister with regard to the bath treatment of infectious diseases. His idea of determining a blood-flux to particular organs and parts of the body was worked out in great detail long before Bier annexed the word 'hyperaemia.' Winternitz's belief in his own methods was very great, so that he imbued his patients with a like confidence, and he was for nearly half a century one of the busiest consultants in Vienna. But in spite of his great popularity he remained an inquirer and a research student to the last, intent on improving the field of medicine which he had so specially made his own."

OSWALDO CRUZ.

THE premature death of Dr. Oswaldo Cruz in Rio de Janeiro has ended the career of the most eminent of South American hygienists. Upon his appointment as Director of Public Health of Rio de Janeiro, Dr. Cruz began a most drastic and fearless campaign to improve the sanitary condition of the city. He had demolished whole quarters of the city which were beyond repair and rigorously isolated all cases of infectious disease. At one time his measures nearly precipitated a revolution against the Government, but the successful issue of his efforts at length won his countrymen's confidence, and he was unhampered by political influence. He organized campaigns against mosquitoes and was untiring in devising measures for the safeguarding of human life. In three years' time he has eliminated yellow fever and plague from the city. In

1908 he began a war against malaria and smallpox and met with great success. In 1900 he founded an institute of bacteriology and serum therapy to which in 1908 the grateful citizens gave his name. This institution has become one of the finest institutes of parasitology in the world. There Cario Chagas discovered the cause of chronic infective thyroiditis and much other valuable research work has been done. The proceedings of the institute are issued each year in a volume printed in Portuguese and formerly in German, now in French.

Miscellany.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS FOR JUNE, 1917.

GENERAL PREVALENCE.

Over ten thousand (10,302) cases of communicable diseases were reported during June, a decrease of more than one thousand compared with the cases reported in May. During June, 1916, there were 7,514 cases reported.

The diseases that show an increase over the cases reported last month are typhoid fever, pulmonary tuberculosis, cerebrospinal meningitis and poliomyelitis. Features of special interest are noted concerning the following diseases.

Anthrax.—There were eight cases of anthrax reported during June, making a total of thirty-two cases for the first six months of this year, which is the largest number of cases ever reported in the state for a like period. Six of the thirty-two cases were fatal.

Six of the June cases were in persons who handled hides. Of these, two worked in the beam house or soak room of a tannery and four worked at unloading hides at the wharves or freight rooms, The two remaining cases were workers in a brush factory, and received their infection from the hair which they handled.

Cerebrospinal Meningitis.—A total of thirty-six cases for June is an increase over the usual number reported for this month; in the corresponding month of previous years, there were twenty-one cases in 1916, seventeen in 1915, and nineteen cases in 1914.

For the first six months of this year, there have been one hundred and twelve cases of this disease reported throughout the state. For the same period in 1916, there were eighty-eight cases reported. For several months this disease has been unusually prevalent in and about the cities of Boston, Pittsfield and Lowell. During June, Springfield and the adjoining city, Chicopee, also reported an unusually large number of cases.

Poliomyelitis.—This disease remains fairly well distributed throughout the state, eight communities reporting sixteen cases during the month. Haverhill, where five cases were reported, presented the only unusual incidence.

Diseases on the Premises of Milk Handlers.—During the month there were reported two cases of scarlet fever in families of milk handlers. Prompt action by the families concerned, who followed instructions of the local Boards of Health, prevented any spread of this disease to consumers.

EPIDEMICS AND OUTBREAKS.

Smallpox.—Ten cases of smallpox were reported during the month, four in Worcester, two in Shrewsbury, two in Fitchburg, and one each in Blackstone and Webster. With the exception of the Blackstone case, all apparently had their origin from the Worcester cases. The outbreak in Worcester, which reached its height in May, is now on the decline, and it is hoped that by next month this disease will be eliminated from the state. The source of infection of the Blackstone case is at present unknown, as the investigation has not been completed. There were two deaths among the ten cases; one had never been vaccinated, and the other was vaccinated in childhood, over fifty years ago.

Typhoid Fever.—Twenty-four cases of the one hundred and six cases of typhoid fever reported during June were from Fall River, where sporadic outbreaks of unknown origin occur from time to time. Suspicious groupings of a few cases of typhoid fever in both Chelsea and Everett during the current month led the local Boards of Health of those cities to carry out special investigations which, however, disclosed no common source of the disease.

Diphtheria.—The outbreak of diphtheria in Malden, which has been persistent for the past few months, is now on the decline as a result of extensive school culturing and the weeding out of children who were found to be harboring the bacillus of diphtheria in their noses and throats. There were twenty-seven cases reported during the month, which is quite a decrease compared with the previous months.

In Lowell, diphtheria is on the increase, fifty-nine cases being reported for June as compared with forty-seven reported during the preceding month. The cases are well scattered in all sections of the city, and no source has been found to account for the continued prevalence.

Cerebrospinal Meningitis.—An interesting neighborhood outbreak of this disease was reported from Beverly, where four cases occurred in the same house during June in four children aged 9 years, 7 years, 21 months and 3 months, respectively. A fifth case in a child five years of age, a playmate of the other children, was reported from a house across the street. This shows how the disease may be transmitted from one to another, and the necessity of carrying out precautions so that one child will not be the source of infection for others.

Scarlet Fever.—In Abington, an investigation

following the report of eight cases of scarlet fever demonstrated that isolation was being carried out very imperfectly. Milk bottles were being left at the houses under quarantine and empty bottles collected. However, no evidence could be discovered to indicate that infection was carried through the milk. The cases were distributed throughout the town, and the probability is that the outbreak was due to unrecognized mild cases.

In North Easton, a family was found in which six out of eight children had scarlet fever before a physician was called. Conditions such as these result in seeding a community and causing an epidemic.

Food Poisoning.—Following a banquet held at a Boston hotel by pupils and teachers of a Quincy school, there were one hundred and seventy cases of food poisoning. Only four or five of those present were not affected. None of the cases was severe, although several of the pupils and teachers were absent from school for a few days after the banquet. The symptoms were chiefly gastro-intestinal, and there were no fatalities.

RARE DISEASES.

Actinomycosis was reported from Cambridge (1).

Anterior Poliomyelitis was reported from Cambridge (2), Worcester (3), Boston (2), Springfield (1), Amesbury (1), Sutton (1) and Haverhill (5).

Anthrax was reported from Peabody (1), Boston (5), Salem (1), Malden (1) and Winchester (1).

Cerebrospinal Meningitis was reported from Chelsea (2), Dracut (1), Templeton (1), Boston (6), Worcester (2), Gloucester (1), Pittsfield (6), Springfield (7), Watertown (1), Beverly (4), Palmer (1), Chicopee (1), Lawrence (1), Maynard (1) and Lowell (1).

Dog-bite was reported from Attleboro (3), Brockton (1), North Adams (1), Lawrence (1), Worcester (1), Lowell (1) and Salisbury (1).

Dysentery was reported from Wrentham (2), Worcester (1) and Boston (4).

Malaria was reported from Boston (5), Fall River (1), Dedham (3), Brockton (1), Brookline (1), Erving (4) and Montague (1).

Pellagra was reported from Lynn (1), Taunton (2), Chelsea (1), Danvers (1), Somerville (1) and Worcester (1).

Septic Sore Throat was reported from Boston (6), Newton (1), Belmont (1), Medford (1), Northbridge (1), Brookline (1) and Chelsea (1).

Smallpox was reported from Worcester (4), Webster (1), Shrewsbury (2), Fitchburg (2), and Blackstone (1).

Tetanus was reported from Worcester (1), Boston (1), Winchester (1) and Springfield (1).

Trachoma was reported from Chelsea (2), Lawrence (2), Salem (1) and Boston (2).

SAFEGUARDING FOODS AND DRUGS.

IN the enforcement of the Food and Drugs Act during the last year, U. S. Department of Agriculture officials analyzed 29,833 samples of foods and drugs offered for interstate shipment and for import. A physical examination was made of samples from 76,468 shipments offered for import. Of these foreign shipments, 6,353 were found to violate the law in some respects and were either excluded from the country or admitted only after the importers had relabeled them to comply with the law. Of the samples of domestic products analyzed 3,535, either because of the nature of the product or because the label on it did not tell the truth, were found to be in violation of the Federal law. In 1,364 cases the Department recommended to the Department of Justice that criminal prosecution be instituted against the manufacturers or that the goods be seized. In many cases where there was no evidence of intention to defraud, and where there was merely some easily remedied flaw in the wording of a label, the shippers, after being warned in hearings, voluntarily took steps which made their products fully comply with the requirements. In all, there were held 8,715 such hearings, many of which resulted in the prosecutions indicated and the gathering of evidence for a large number of additional cases, which will be forwarded to the Department of Justice.

The Bureau of Chemistry, in its annual report, also calls attention to the fact that through the system of Service and Regulatory Announcements now in use, manufacturers are given due notice of the requirements and thus are enabled voluntarily to make their products conform to the law. In this way the government achieves its purpose, frequently without entering into needless and very expensive litigation.

In the regulatory work, special emphasis has been given to the control of drug products and foods liable to spoilage and pollution. These frequently constitute a serious menace to health. The food inspectors have been instructed to be particularly watchful for interstate shipments of bad eggs, milk, oysters, and spoiled canned goods, and false and fraudulently labeled medicines and spurious, synthetic drugs.

Attempts to counterfeit or adulterate imported drugs have been more common since the recent high price and scarcity of many of these products encouraged their imitation. It is interesting to note that of the 1,036 cases terminated in the courts during the year, 198 were brought on account of the false and fraudulent labeling of medicines. In all of these medical cases, save five, the courts found for the government, and this, it is believed, has exercised an important deterrent effect on the venders of nostrums shipped from one State to another.

The work of controlling the fraudulent labels of medicines and mineral waters has been greatly strengthened by the establishment of a

separate office to deal with these matters. At the request of the Secretary of Agriculture an officer of the U. S. Public Health Service has been detailed to take charge of this work. Moreover, through the close coöperation established with the foods and drugs officials of many of the States, the Department was able to direct the attention of the local authorities to the presence of spurious drugs in their States and, as a result, many of these fraudulent goods in the hands of local dealers and beyond the reach of the Federal authorities were destroyed by State and municipal officers who, in many cases, prosecuted those responsible for the local traffic.

The coöperation in the sanitary control of the milk supply of small cities, described in the report for last year, has been extended in Illinois, Iowa, Missouri, Kansas, Nebraska, and in New England. It is proposed to repeat this work year after year, extending it each year to new territory. In some localities bad conditions were found, due in the main to insufficient cooling and careless handling. Perhaps the best result of this work has been that it stimulated some of the local authorities to take up similar work independently, so that definite permanent improvement of the milk supply of a number of cities has resulted. The coöperative work on the control of the shipment of decomposed eggs, described in the report of last year, has been extended to cover much of the territory in which shipments originate, so that eggs are now candled before shipment far more than formerly and the spoiled eggs destroyed or fed to poultry and stock. At the same time information given to local officials has helped them to curb local traffic in eggs rejected in candling.

The Bureau of Chemistry, after making cooperative sanitary surveys of oyster beds, issued warnings against the interstate shipment of oysters from polluted and doubtful beds and, where these warnings were not regarded, undertook prosecutions. As a result, interstate shipment from such territory was stopped.

The campaign against the sweating of immature oranges and immature grapefruit so as to give the immature fruit the color of ripe fruit has been successful, largely because of the active help of the greater part of the citrus-fruit producers. Comparatively few sweated, immature oranges were offered during the last year, and it is believed the better quality of fruit resulted in a steadier market, so that the producer as well as the consumer benefited.

Other forms of adulteration, not already mentioned, that received especial attention are the adulteration of scallops and canned tomatoes with water, the substitution of colored starch paste for tomato sauce, the reprocessing of spoiled canned goods, the traffic in cull beans, in decomposed tomato products, in rancid olive oil, in wormy horse beans, the substitution of foreign fat for cacao butter in, and the addition of cacao shells to, cacao products, the adulteration of rice bran with rice hulls, the coloring of inferior macaroni and of plain noodles, the misbranding of domestic macaroni in simulation of imported goods, and the adulteration of oats with water or weed seeds.

SYPHILIS IN THE AUSTRIAN ARMY.

"IN a recent issue of the *Wiener Klinische Wochenschrift* (xxix, No. 51), Hecht, an Austrian army surgeon, states that in his corps records are now kept of every man with venereal disease, and a certain mark opposite the name of a man on the register indicates that in no circumstances is he to be granted home leave. This restriction of home leave had previously been enforced for typhoid carriers. Hecht adds that no one seems to class the venereal diseases with infectious diseases, but he is convinced that this neglect to apply the measures that have been found reliable with other infectious diseases will avenge itself sooner or later. He estimates that the number of syphilitics in the Austrian army now must certainly be several hundreds of thousands, and complains that they are being treated in hospitals, while sound and healthy men are being shot down in their stead. This actually places a premium on sexual infection, for the healthy have no chance of a few months' respite in the hospitals from the fighting. The effect likewise is to spare the syphilitics while the sound get killed off. He makes the very reasonable suggestion that the diagnosis should be the signal for sending the men to the front. This would have a deterrent effect; at present many prefer to take their chances with syphilis rather than with the enemy's shells. Hecht thinks it might be possible to form special companies of syphilitics as soon as the ulcers have healed over, so that the treatment could be conveniently continued and applied on the firing line, while infection of other troops would be prevented. Neisser long insisted that courses of salvarsan and mercury could be given perfectly well in the trenches. Hecht declares that it is impossible to reiterate too often the frightful danger for the populace from syphilitics in the primary phase. Since the war began, a total equivalent to sixty divisions have been temporarily withdrawn from the fighting for venereal diseases. In conclusion, Hecht insists on the necessity for enlightening the public in regard to the danger of venereal disease in candidates for matrimony."—From *Medical Officer*, London.

SAVING MOTHERS.

MORE women 15 to 45 years of age die from conditions connected with childbirth than from any disease except tuberculosis. About 15,000 deaths from maternal causes occur annually in the United States, and the available figures for

this country show no decrease in the maternal death rate since 1900. Maternal deaths are largely preventable by proper care and skilled attendance.

These 15,000 deaths do not measure the full extent of the waste. They are merely a rough index of unmeasured preventable illness and suffering among mothers. Furthermore, certain diseases of early infancy are closely connected with the health of the baby's mother and the maternity care she has received, and these diseases cause about one-third of all the deaths occurring among babies under one year of age. More than 75,000 babies die each year from this group of diseases because they do not have a fair start in life.

The life and health of the mother are in every way important to the well-being of her children. Breast feeding through the greater part of the baby's first year is his chief protection from all diseases, and mothers are much more likely to be able to nurse their babies successfully if they receive proper care before, at, and after childbirth.

The expectant mother should at once consult a physician. She should remain under supervision so that any dangerous symptom may be discovered as soon as it appears. She should learn how to take care of herself, and she should have proper food and rest, and freedom from anxiety. When the baby is born, the mother needs trained attendance. A difficult maternity case is one of the gravest surgical emergencies. Many people do not seem to understand that in any case complications may arise which can be met safely by prompt and skillful scientific care, but which at the hands of an unskilled attendant may cost the life of mother or child, or both. Even after confinement, the mother needs continued supervision and rest until her strength has returned.

Thousands of mothers, both in city and country, do not have the essentials of safety, partly, perhaps chiefly, because they do not realize the dangers involved in lack of care or else accept the dangers as unavoidable. Many women are at present unable to obtain proper care, but when all women and their husbands understand its importance and demand it for every mother, physicians will furnish it, medical colleges will provide better obstetrical training for physicians, and communities will see to it that mothers are properly protected.

Little has been done as yet to show women that much of the waste of mothers' lives and health is unnecessary. Even less has been undertaken by communities to provide protection for them. Many communities which have studied their typhoid and tuberculosis death rates, and have undertaken costly measures to reduce them have been heedless of the death rates among mothers. It is not strange, therefore, that since 1900 the typhoid rate for the country as a whole has been cut in half, and the rate from tuberculosis has been markedly reduced, while the death rate from maternal causes has shown no demonstrable decrease.

Just how the importance of adequate maternity care is to be made plain to a community, and just how skilled care and instruction are to be made available for all mothers, are, of course, local questions, to be considered by each community. The prenatal clinics and prenatal nursing, which are being developed in many cities, suggest a method of supervision and instruction which might well be extended. Even in cities where such work is carried on and where good hospitals are numerous, the number of mothers reached is small in comparison with the number who bear their children without adequate care.

Difficulties are perhaps greatest in rural districts where the sheer inaccessibility of a physician is often added to the other elements of the problem. Here a public nursing service, with headquarters at the county seat, or other accessible town, would probably be the first step, placing at the service of every expectant mother a visiting nurse, who is especially equipped to give her information about personal care and to watch for symptoms of trouble demanding medical advice. As such a nursing service develops, its headquarters might become, with the cooperation of physicians, a sort of maternal and child-welfare center, to which not only prospective mothers, but also mothers with babies, could come for instruction, examination, and advice. If no general hospital were conveniently near, a cottage hospital for mothers and babies might ultimately form a part of such a center.

A more general use of existing provisions for scientific maternity care, and the extension of provisions for such care in all types of communities, should serve to reduce the number of deaths among mothers and babies, and to improve the health and general condition of children throughout the country. A full discussion of the causes and prevention of maternal deaths and an analysis of available statistics, are contained in a report on Maternity Mortality, published by the Children's Bureau.

The Children's Bureau has several publications which are of interest in connection with work for the welfare of mothers and babies. A list of these publications will be sent upon application to the Children's Bureau, Washington, D. C.

Correspondence.

TUBERCULOSIS IN THE ARMY.

San Francisco, Cal., July 12, 1917.

Mr. Editor:—

In your issue of July 5th is an editorial on tuberculosis in the army, in which you call attention to the plan for "volunteer services of experienced physicians" needed in eliminating "active or obvious pulmonary tuberculosis." You call attention to the value to the army in effectiveness in preventing such cases from enlisting or being drafted, and point out that incipient cases may be safely placed at useful civil work.

All that you say is true, and it is a very worthy service that physicians skilled in detection of early pulmonary tuberculosis may render by making possible the segregating of such cases. *But* there is a big side of the whole problem—perhaps its most important side—to which you make no reference, and that concerns what is the nation's, the state's, the municipality's and the physician's duty to these uncovered cases of tuberculosis. What are we going to do with them and for them? Surely it is wrong to cast these men aside, discouraged and confused by the too often unsuspected information that they have "consumption." The examining officers are frequently to blame for the way such facts are presented to such unfortunates and it is possible that the tragedy of yesterday in San Francisco, wherein a young man who had served on the Mexican border sought enrollment and was thrown out on account of a lung condition, took poison, might have been avoided and a handicapped individual made to serve happily some function for his country.

Is it not time that the medical profession united on some plan for coördinating all the possible forces available for the care of these uncovered cases of tuberculosis, and thereby turn to advantage the possibilities for good in this tuberculosis survey of 600,000 of our young men? For a year and a half some of us have advocated the passage by Congress of a bill, known as the Kent Bill, providing for a Bureau of Tuberculosis in the Public Health Service and for the care of indigent non-resident consumptives through a subsidy or the returning of such patients to their home towns, provided they could be cared for there. The bill brought out some opposition from just the source least expected—a few social workers who feared that it would increase migration of consumptives. The discussion of the subject may be found in the *Survey* of July 29, 1916, *The Journal of the American Medical Association*, Aug. 5, 1916, and in the *Journal of the Outdoor Life*, July, 1917.

The whole point of the matter, however, is that the federal government alone may regulate interstate traffic and exercise the power to prevent migration and control the travel of consumptives. If the Kent Bill were a law today, we could provide at once for the wanderers who are being buffeted about from town to town and the same government machinery that had in charge the thirty to forty thousand such cases could handle wisely the new cases which the army examination will bring to light. Not that these cases should be classed with the wandering indigents by any means, but with a nation-wide machine for determining the existence and extent of the disease among drafted men and a full knowledge of each community's resources for the care of pulmonary tuberculous cases, an immense advantage would be gained by starting these men on the safe road, instead of casting them adrift with a staggering blow, calculated only to increase the tragic effect of the unexpected situation.

California has met this approaching situation by appropriating at once $100,000 for the purchase of a property admirably calculated to be used at once for the care of its prospective soldiers, rejected because of the discovery of tubercular lung lesions. It seems only fair that each state should make some such provision and that the federal government should help to support this work. A good many cases not active at entrance examination are going to become so later and there should be adequate provision for immediate efficient care. Why cannot Massachusetts, which usually is in the lead in such matters, start at once to do its own duty thoroughly and help to bring about the coöperation of the central government in this most important work?

PHILIP KING BROWN.

RECENT DEATHS.

JAMES DWIGHT, M.D., of Boston, died at his summer home at Mattapoisett, on July 13. He was born in 1852, the son of Thomas Dwight and Mary C. Dwight. Dr. Dwight achieved world-wide distinction as a tennis player, and for many years had labored in the interests of the game. As president of the United States National Lawn Tennis Association, he was instrumental in raising the game to its present high standard. In 1886 he wrote and produced the first American book on tennis. He was a skillful player and in the history of the game became an efficient and faithful leader. Dr. Dwight is survived by his widow, two sons and three daughters.

JAMES AMBROSE JONES, M.D., a Fellow of the Massachusetts Medical Society, died at his home in Lynn, July 4, 1917. He was a graduate of the University of Vermont in the Class of 1906, and joined the Massachusetts Medical Society in 1908. He was 53 years old.

EDWIN NELSON MAYBERRY, M.D., died at South Weymouth, July 14, 1917, aged 60 years. He was a graduate of the University of Vermont School of Medicine in 1882 and settled in South Weymouth in 1889, when he joined the Massachusetts Medical Society. He was president of the Norfolk South District Medical Society in 1911-12 and since then had been a councillor.

DR. GRANTLEY BICKELL, a prominent veterinary surgeon of Haverhill, Mass., died at his home on July 9. Dr. Bickell was born in 1872. He was a member of the State Bureau of Animal Industry and was active in the recent campaign throughout New England against foot and mouth disease.